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CONFERENCE ON LIVER DISEASE IN AFRICA

2023 ABSTRACT BOOK

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CONFERENCE ON LIVER DISEASE IN AFRICA (COLDA) 2023

7-9 SEPTEMBER
HYBRID MEETING
DAR ES SALAAM, TANZANIA

ABSTRACTS
ORAL PRESENTATIONS

1

Hepatitis B (HBV) Testing and Treatment Policy Assessment in Six African Countries: Examples to Inform HBV Program Scale-up

Hiebert L[1], Manning J[1], Gupta N[1], Nartey Y[1], Ward J[1]

[1]Coalition For Global Hepatitis Elimination, Task Force For Global Health, Decatur, United States

Background: The World Health Organization (WHO) estimates that 28% of hepatitis B (HBV) infections in 2019 were in the African region. As WHO plans to release updated HBV clinical guidelines in 2023, national policies that facilitate expanded testing and treatment access in the African region are needed. To better understand the HBV policy gaps, an assessment of testing and treatment policies in select countries was conducted.

Methods: Available policy information was compiled from National Hepatitis Elimination Profiles (N-HEP) for Ethiopia (ET), Ghana (GH), Nigeria (NG), Rwanda (RW), Senegal (SG), and South Africa (SA). Profiles were originally developed in 2021-2022. Policies assessed included national screening recommendations, availability of point-of-care (POC) testing, guidelines promoting decentralization, cost barriers, and monitoring systems. Data sources included government reports, WHO/UNICEF databases, and peer-reviewed publications. Ministry of Health officials, clinical experts, and civil society representatives reviewed and contributed data.

Results: RW is the only country with a free and universal HBV screening policy. Four of six countries recommend risk-based screening. HBsAg screening is included under the GH National Health Insurance, but patients often still pay out-of-pocket. In SA, HBsAg screening is only free if laboratory-based. Patients in ET, SG, and NG pay out-of-pocket. HBV POC PCR testing is only licensed nationally in ET and SA. NG has adopted POC PCR testing in select states. Only RW has adopted HBV treatment decentralization to primary care and removed patient treatment co-pays. In SA, patients must be initiated on HBV treatment at secondary health facilities and then be referred to primary level. In GH, district and regional hospitals can offer HBV treatment but in reality patients must use teaching hospitals. Only RW has implemented a system to monitor the number of persons diagnosed and treated for HBV. NG and ET are currently rolling out systems.

Conclusion: Select examples exist of policy adoption to facilitate large-scale, public health HBV test and treat programs in the African region. These policy examples offer lessons learned for other countries on expanding national screening recommendations, licensing and implementing POC PCR testing, promoting treatment decentralization, reducing patient costs, and investing in information systems.

2

A hepatitis B virus dual point-of-care test strategy to identify treatment-eligible patients in Africa

Dellil M
[1]St. Paul`s Hospital Millennium Medical College, Addis Ababa, Ethiopia

Background: Antiviral treatment of chronic hepatitis B virus (HBV) infection reduces the risk of cirrhosis and hepatocellular cancer. Internationaltreatment criteria for HBV include elevated alanine transaminase (ALT) and viral load, or the presence of cirrhosis, but investigations for disease assessment are expensive and scarce in resource-limited settings where HBV is endemic, such as in Ethiopia. We developed a combinationdual novel point-of-care-test (POCT) screening strategy for (i) quantifying serum ALT (ALT-1) and (ii) IgA2 and dimeric IgA (IgA2/dimer) to determine hepatic inflammation and >F2 fibrosis, as an inexpensive alternative to laboratory diagnostics. These were field tested in a pilot clinical study in Addis Ababa, Ethiopia.

Methods: Serum from a derivation cohort comprising 200 selected patients with HBV infection in Addis Ababa were used to determine cutoffs. These were applied to a validation cohort of 105 randomly selected patient samples to confirm ease and reliability of application. The tests were then blindly performed on 251 patients with liver disease in Addis Ababa, as a pilot clinical validation study.

Results: Among patients with HBV, ALT-1 POCT correlated well with laboratory ALT;sensitivity to detect ALT >40 U/L was 82%. The IgA2/dimer POCT proved effective in identifying patients with >F2 fibrosis, with sensitivity of 70-82% on serum samples, but in blood was only63% sensitive. Nevertheless, in a highly endemic area, the ALT and IgA2/dimer dual-POCT approach identified treatment-eligible HBV patients with 75% sensitivity, 30% specificity, 30% positive predictive value, 76% negative predictive value. Among those who had a high viral load, sensitivity was 85%for identifying patients meeting EASL criteria for treatment eligibility.

Conclusion: This dual POCT combination is a portable, inexpensive and effective method to triage the majority of those who need treatment for HBV, with potential to be applied at every clinic visit.

3

Time to Initiation of Hepatitis B Treatment Is Reduced With the Use of the Xpert HBV DNA Kit

Johannessen A[1,2], Desalegn H[1,3], Berhe N[1,4]
[1]Vestfold Hospital, Tonsberg, Norway, [2]University of Oslo, Oslo, Norway, [3]St. Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia, [4]Addis Ababa University, Addis Ababa, Ethiopia

Background: In 2015, we set up a pilot treatment program for chronic hepatitis B virus (HBV) infection in Addis Ababa, Ethiopia ("the pilot program"), using private and research laboratory facilities to measure HBV DNA with the Abbott RealTime HBV DNA assay. In 2021/22, we established a scale-up treatment program at four new sites ("the scale-up program") and used the Xpert® HBV DNA kit from Cepheid. Here we present time to treatment initiation in the first year of these two programs.

Methods: The treatment eligibility criteria in the pilot program were: i) Decompensated cirrhosis, ii) Compensated cirrhosis, iii) Liver stiffness >7.9 kPa and HBV DNA >2000 IU/ml, iv) Alanine aminotransferase (ALT) >2x upper limit of normal and HBV DNA >2000 IU/ml, v) HCC in first-degree relative and HBV DNA >2000 IU/ml.
The treatment eligibility criteria in the pilot program were: i) Decompensated cirrhosis, ii), Compensated cirrhosis, iii) ALT > upper limit of normal and HBV DNA >2000 IU/ml, iv) HCC in first-degree relative and HBV DNA >2000 IU/ml.
In both programs, treatment was initiated without delay in the presence of decompensated cirrhosis, otherwise the treatment decision depended on the laboratory test results.

Results: In the pilot program, 1303 patients were enrolled in the first year, of whom 218 patients (16.7%) initiated antiviral treatment the first 12 months of the program. In hindsight, 328 patients (25.2%) fulfilled the treatment eligibility criteria at inclusion; the most common reasons for not starting therapy were: awaiting laboratory results (n=51), loss to follow-up (n=21) and death (n=14). In the scale-up program, 2794 patients were enrolled in the first year, of whom 857 (30.7%) initiated treatment the first 12 months of the program.

The median time to treatment initiation was 26 days (interquartile range 8-89) in the pilot program and 1 day (interquartile range 0-7) in the scale-up program (p<0.001).

Conclusion: The use of the Xpert HBV DNA kit significantly reduced the time to initiation of hepatitis B treatment. The prolonged turnaround time with the use of conventional HBV DNA assays can lead to missed opportunities to prevent HBV-related complications.

4

Hepatitis E Virus Detected in Wastewater Samples in South Africa

Roberts B[1], Maponga T[1,2], Presier W[1,2], Johnson R[3], Muller C[3]

[1]Division of Medical Virology, Department of Pathology, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town,, South Africa, [2]National Health Laboratory Service, Parow,, South Africa, [3]South African Medical Research Council, Tygerberg,, South Africa

Background: The WHO estimates that there are 20 million Hepatitis E virus (HEV) infections worldwide every year, most transmitted through ingestion of contaminated water or food. Four HEV genotypes are capable of infecting humans, with most infections being asymptomatic or subclinical. Despite high seroprevalence, clinical suspicion of HEV as the causative agent of hepatitis remains low and diagnostic testing uncommon in South Africa. We sought to apply wastewater-based epidemiology, using HEV RNA as a marker, to understand the circulation of HEV in South Africa.

Methods: We tested wastewater samples collected between January to September 2021 from two wastewater treatment works (WWTW) and two university residences in the Western Cape, South Africa. Total nucleic acid was extracted from the samples by the South African Medical Research Council as part of the COVID-19 wastewater surveillance program. Aliquots were used to test for the presence of HEV RNA using an in-house reverse transcriptase qualitative real-time polymerase chain reaction (RT-qPCR). The assay targeted a 69 base pair region of open reading frame (ORF) 3 of the genome. HEV genotypes were determined by Sanger sequencing an overlapping region of ORF2 and ORF3.

Results: Out of 130 wastewater extracts, 20 (15.4%) were positive for HEV RNA. HEV RNA was detected in 9/31 (29.0%) samples from Zandvliet WWTW, in 5/34 (14.7%) samples from Athlone WWTW (14.7%), in 1/29 (3.4%) samples from a health sciences campus residence, and in 5/36 (13.9%) samples from another residence housing non-medical students. Sequencing revealed the presence of HEV genotype 3, which is primarily associated with zoonotic transmission from porcine sources.

Conclusions: The detection of HEV RNA in wastewater indicates ongoing transmission and circulation of HEV within South Africa. The presence of HEV genotype 3 suggests a zoonotic rather than faecal-oral source of infection. These results indicate need for clinical suspicion of HEV, particularly in cases of acute hepatitis where other common pathogens are ruled out.

5

Evaluation of Interventions to Improve Timely Hepatitis B Birth Dose Vaccination Coverage Among Infants in Nigeria

Kanu F[1], Freeland C, Nwokoro U, Mohammed Y, Ikwe H, Uba B, Sandhu H, An Q, Fadahunsi R, Adewole A, Ugbenyo G, Simple E, Wisdom M, Waziri N, Akudo O, Saidu B, Isa A, Asekun A, Ugwu G, Obi E, Ismail B, Bassey B, Bolu O, Shuaib F, Tohme R
[1]US CDC, Atlanta, United States

Increasing timely (within 24 hours) hepatitis B birth dose (HepB-BD) vaccination coverage is key to preventing mother-to-child transmission (MTCT) of HBV. To advance HBV MTCT elimination in Nigeria, we implemented and evaluated interventions targeting pregnant women attending antenatal care, health care workers (HCWs), and community volunteers with the goal of adapting strategies successful in the Western Pacific Region to the African context. Interventions consisted of three main components: training HCWs and community volunteers, engaging pregnant women during antenatal care visits, and supportive supervision.

Of 80 facilities, 40 received an intervention package and 40 served as controls. HepB-BD vaccination data were extracted from immunization registers from January 1, 2021 to June 30, 2021 (baseline) and from January 1, 2022 to June 30, 2022 (endline). Average HepB-BD timely, untimely (after 24 hours of birth and up to 2 weeks of age), and total (timely or untimely) vaccine coverage rates were calculated using total number of HepB-BD vaccines divided by half of the estimated total number of live births in a facility area since data were extracted from half of the given year. We used Wilcoxon signed-rank test to examine changes in vaccination coverage from baseline to endline. Additionally, eight focus group discussions were held among 39 HCWs and 38 community volunteers within intervention facilities to understand intervention strengths, weaknesses, and opportunities for improvement.

There was a significant change in average vaccination coverage from baseline to endline among intervention facilities for timely HepB-BD (21.5% to 74.3%), untimely HepB-BD (49.3% to 19.2%), and total HepB-BD vaccination (55.7% to 74.3%). At endline, timely HepB-BD vaccination coverage was significantly higher in intervention (74.3%) compared to control facilities (19.3%). During focus group discussions, HCWs reported better awareness on timely HepB-BD vaccination and improved vaccine uptake among pregnant women. HCWs recommended scaling up interventions by engaging traditional birth attendants and increasing community volunteers and transportation provisions.

Tailored strategies including HCW and community volunteer training, community engagement, and supportive supervision were successful in improving HepB-BD vaccination coverage. Scaling up these interventions along with further engagements with traditional birth attendants across Nigeria would help advance elimination of MTCT of HBV.

6

Effectiveness of Tenofovir Prophylaxis for the Prevention of Mother-to-child-transmission of Hepatitis B Virus in Burkina Faso

Ouoba S[1,2], Ko K[1], Lingani M[1], Chhoung C[1], Phyo Z[1], Sugiyama A[1], E B[1,4], Hussain M[1], Guingane A[3], Sanou M[2], Akita T[1], Takahashi K[1], Tinto H[2], Tanaka J[1]

[1]Department of Epidemiology, Infectious Disease Control and Prevention, Graduate School of Biomedical and Health Sciences, Hiroshima University, Hiroshima, Japan, [2]Unité de Recherche Clinique de Nanoro (URCN), Institut de Recherche en Science de la Santé (IRSS), Nanoro, Burkina Faso, [3]Unite de Formation et de Recherche en Sciences de la Sante, Universite Joseph Ki Zerbo, Ouagadougou, Burkina Faso, [4]Payment Certification Agency (PCA), Ministry of Health, Phnom Penh, Cambodia

Background: Mother to child transmission (MTCT) of hepatitis B virus (HBV) is a health challenge in Africa. Antiviral prophylaxis in pregnant women has been shown to reduce MTCT risk when combined with hepatitis B vaccine and hepatitis B immunoglobulin (HBIG). However, HBIG is often unavailable in resource-limited settings. This study evaluated the effectiveness of tenofovir prophylaxis without HBIG for HBV MTCT prevention in Burkina Faso.

Methods: A longitudinal study was conducted from February 2021 to December 2022 in 3 healthcare centers. 1,622 pregnant women were screened for HBsAg by rapid test and 106 positive women were enrolled. They received tenofovir from the third trimester until 3 months post-partum. Their babies received hepatitis B vaccine at birth, 1, 2, 3 and 4 months. Dried blood spot (DBS) samples were collected from mothers at screening, delivery, and 6 months post-partum, and from infants at 6 months. The samples were tested for HBV seromarkers, viral load and genotype.

Results: Of 106 HBsAg-positive pregnant women enrolled, 87 attended delivery and 86 the 6-month visit. Viral load was measured in 94 mothers at screening, 60 at delivery and 81 at 6 months. Median viral load was 18,317 IU/mL (IQR, 0-135,281 IU/mL) at screening and decreased to 1.69 IU/mL (IQR, 0-20.7 IU/mL) at delivery. 19.1% (18/94) mothers had viral load >200,000 IU/mL at screening and 3.3% (2/60) at delivery. A viral load rebound was observed at 3 months after tenofovir cessation (median 49.1 IU/mL, IQR, 8.8-299 IU/mL). Two of 86 infants (2.3%) tested positive for HBsAg by rapid test at 6 months, confirmed in DBS. Their mothers were aged 22 and 27 years, had high viral load >200,000 IU/mL at screening and delivery and were infected with genotype E. The infants also harbored genotype E and had received the birth dose, with three and four booster doses, respectively.

Conclusions: Tenofovir prophylaxis combined with infant vaccination reduced the risk of MTCT risk but did not prevent it completely. The occurrence of MTCT cases in mothers with high viral loads and genotype E infection highlights the need for further research and targeted strategies to prevent HBV MTCT.

7

HBeAg and HBV DNA in the Hepatitis B in Africa Collaborative Network (HEPSANET)

Stockdale A[1,2], Johannessen A[3], Andersson M[4], Davwar P[5], Desalegn H[6], Duguru M[5], Fall F[7], Guingane A[8], Lemoine M[9], Maponda T[10], Paul D[5], Seydi M[11], Sinkala E[12], Shimakawa Y[13], Sombie R[14], Sonderup M[15], Spearman C[15], Riches N[16,17], Taljaard J[18], Vinikoor M[12], Ramirez Mena A[18], Matthews P[19], Okeke E[5]

[1]University of Liverpool, Liverpool, United Kingdom, [2]Malawi Liverpool Wellcome Trust Programme, Blantyre, Malawi, [3]Institute of Clinical Medicine, University of Oslo, Oslo, Norway, [4]Nuffield Department of Medicine, University of Oxford, Oxford, UK, [5]Faculty of Medical Sciences, University of Jos, Jos, Nigeria, [6]Medical Department, St. Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia, [7]Department of Hepatology and Gastroenterology, Dakar Main Hospital, Dakar, Senegal, [8]Hepato-Gastroenterology Department, Bogodogo University Hospital Center, , Ouagadougou, Burkina Faso, [9]Department of Metabolism, Digestion and Reproduction, Imperial College London, London, UK, [10]Division of Medical Virology, Stellenbosch University Faculty of Medicine and Health Sciences and National Health Laboratory Service Tygerberg Business Unit, Cape Town, South Africa, [11]Department of Infectious and Tropical Diseases, Regional Center for Research and Training, Fann National University Hospital Center, Dakar, Senegal, [12]Department of Internal Medicine, University of Zambia, , Lusaka, Zambia, [13]Epidemiology of Emerging Diseases Unit, Institut Pasteur, Paris, France, [14]Département d'Hépato-gastroentérologie, Yalgado Ouédraogo University Hospital Center, Ouagadougou, Burkina Faso, [15]Division of Hepatology, Department of Medicine, Faculty of Health Sciences, University of Cape Town, Cape Town, South Africa, [16]Department of Clinical Sciences and International Public Health, Liverpool School of Tropical Medicine, , Liverpool, UK, [17]Malawi Epidemiology and Intervention Research Unit, Lilongwe, Malawi, [18]University of Bern, Bern, Switzerland, [19]Francis Crick Institute, London, UK

Background: HBV DNA concentration and HBeAg status are biomarkers for viral replication and correlate with the risk of hepatocellular carcinoma, cirrhosis, and HBV transmission. We assessed the association between i. HBeAg status and ii. HBV DNA, and patient- and site-level characteristics in a multicentre study.

Methods: We analysed individual participant data from the HEPSANET database. We excluded patients on HBV treatment, those with hepatitis C or D, HIV, ALT/AST>5x the upper limit of normal (ULN) and suspected hepatocellular carcinoma. We fitted a generalised additive model for HBV DNA concentration, considering age (with spline stratified for HBeAg), sex, reason for HBV testing (liver disease vs. asymptomatic screening), and site, and a logistic regression model for HBeAg status, considering age (with restricted cubic spline), sex, test reason, location (hospital or community) and region (West vs. East/Southern Africa).

Results: Among 2774 people from 9 centres in 6 countries, median age was 34 years (IQR 28–42) and 1643/2774 (59.2%) were males; 2102 (75.8%) had detectable HBV DNA; median concentration was 2.65 log10 IU/ml (IQR 1.73-3.64). HBV DNA was higher in men (2.69 log10 IU/ml (1.76–3.79)) than women (2.55 log10 IU/ml (1.40–3.46), p=0.012 (Wilcoxon-rank-sum); in a multivariable model, this finding persisted (co-efficient for males 0.12 (95% CI 0.01–0.25), p=0.041). HBV DNA concentration was lower in West Africa (median 2.07 log10 IU/ml (1.40–2.91) than East/Southern Africa (3.08 (2.30–4.12)), p<0.001, consistent after adjustment for age, sex and test reason (co-efficient -0.72 (-0.84– -0.61), p<0.001). HBeAg prevalence was 247/2642 (9.4%) overall; 152/2225 (6.8%) in screening and 90/377 (23.9%) in suspected liver disease. In asymptomatic screening, HBeAg declined with age; prevalence at <20 years, 20-29, 30-39, 40-49 and ≥50 was 17.6%, 9.9%, 5.7%, 2.2% and 5.7% respectively. HBeAg was higher in men (aOR 1.89 (95% CI 1.39–2.56), p<0.001) and in East/Southern Africa (aOR 1.90 (1.32–2.73), p=0.001).

Conclusions: Males and people living with HBV in East/Southern Africa (relative to West Africa) had higher HBV DNA and were more likely to be HBeAg positive after adjusting for confounders. The geographic findings could be driven by genotype and may have relevance for transmission risk and treatment eligibility.

8

Virological Characterization of Treatment Failures and Retreatment Outcomes in Patients Infected With "Unusual" HCV Genotype 1 Subtypes

Vo Quang E[1,2], Soulier A[1,2], Ndebi M[1,2], Rodriguez C[1,2], Chevaliez S[1,2], Leroy V[2], Fourati S[1,2], Pawlotsky J[1,2]

[1]National Reference Center for Viral Hepatitis B, C and Delta, Department of Virology, Créteil, France, [2]Institut Mondor de Recherche Biomédicale, INSERM U955, Université Paris-Est, Créteil, France, Créteil, Créteil

Background: Among the so-called "unusual" HCV genotypes, genotype 1, non-1a/1b subtypes are common in patients of African origin. Here, we characterize amino acid substitutions present at baseline and selected by DAA therapy in regions targeted or not targeted by DAAs in non-1a/1b subtypes infected patients who failed to achieve SVR.

Methods: Sequence determination was based on Sanger sequencing, deep sequencing, or both, according to the availability of the methods upon reception of the samples. Deep sequencing was performed by means of NextSeq500 (Illumina). Full-length HCV sequences were analyzed using our original in-house MetaMIC® software (1% cutoff).

Results: Among 640 patients with HCV infection treated with an NS5A inhibitor-containing regimen who experienced a virological failure, 285 (44.5%) were infected with GT-1, and 47 of them (7.5%) with "unusual" GT-1 subtype, including: 1d (n=8), 1e (n=13), 1f (n=1), 1g (n=2), 1i (n=2), 1k (n=1), 1l (n=18) and 1-undetermined (n=2). 41/44 (93.2%) were born in Africa. Treatment regimens were NS5B inhibitor + NS5A inhibitor (80.9%), NS3 protease inhibitor + NS5A inhibitor (9.1%), NS3 protease inhibitor + NS5A inhibitor + NS5B inhibitor (4.3%). At baseline, in the NS5A region, 2 to 4 polymorphisms known to be associated with reduced susceptibility to NS5A inhibitors were present as dominant species (>99%) by deep sequencing in 5 patients, including 3 infected with GT-1l and 2 with GT-1e. The most frequent polymorphisms were K24G/R, L31M, H58P and A92T. At treatment failure, 35/36 (97%), 30/36 (83.3%), 16/36 (44.4%) and 4/36 (11.1%) patients harbored 1, 2, 3 or 4 NS5A RASs, respectively. The majority of patients harbored NS5A RASs at positions L31, H58 and Y93. One NS5B polymerase RAS (C316Y) was present at failure in a GT-1e-infected patients who received dasabuvir. All patients treated with a triple combination of DAAs or with the combination of glecaprevir and pibrentasvir achieved SVR.

Conclusion: We report the largest cohort of patients infected with "unusual" GT-1 subtypes failing DAAs thus far. Our results emphasize the need for identifying this subtype in Africa where they are common, and the urgent need to guarantee equal access to last-generation DAA therapies in Africa.

9

Introducing Sofosbuvir/Velpatasvir+Ribavir in as a Generic Retreatment Regimen for Hepatitis C: A Prospective Cohort Study in Rwanda

Serumondo J[1], Barebwanuwe P[2], Iyonizera J[2], Sheferaw E[2], Berabose C[1], Dushimiyimana D[1], Umutesi J[1], Umuraza S[2], Ntuyenabo C[2], Reine Kwizera K[2], Azania A[3], Ngwije A[2], Boeke C[3], Kabakambira J[4], Ramers C[3], Rwibasira G[1]

[1]Rwanda Ministry of Health, Rwanda Biomedical Center , Kigali, Rwanda, [2]Clinton Health Access Initiative, Kigali , Rwanda, [3]Clinton Health Access Initiative, Boston, Boston, [4]Kigali University Teaching Hospital , Kigali, Rwanda

Background: Approximately 5% of people living with HCV (PLHCV) fail initial direct-acting antiviral (DAA) therapy. The World Health Organisation recommends Sofosbuvir/Velpatasvir/Voxilaprevir for retreatment, but this drug is not available in low- and middle-income countries (LMIC) due to high cost and low volumes. Retrospective data suggest high cure rates when retreating with Sofosbuvir/Velpatasvir+Ribavirin (SOF/VEL+RBV), but limited prospective data is available. In Rwanda, we conducted a prospective cohort study on the feasibility, side effects, and patient outcomes of HCV retreatment with SOF/VEL+RBV.

Methods: PLHCV with treatment failure following an initial DAA-based regimen were recruited from 44 hospitals and consented to participate in a retreatment study using SOF/VEL+RBV x 24 weeks (November 2021-October 2022). Participants were counseled on pregnancy prevention and offered modern contraceptives. Clinical and laboratory assessments were performed at baseline and during treatment to assess drug safety. Every patient was monitored by trained clinicians from treatment initiation to the date of the sustained virologic response test.

Results: 231 patients were enrolled: 149 (64.5%) were female, 166 (71.9%) were aged 60+ years, 21 (9.2%) were living with HIV, 16 (6.9%) were cirrhotic (defined by APRI). Using an intention to treat analysis; 174 participants were cured (75.3%); using a per protocol analysis, 80.6% were cured. The most reported side effects were fatigue (26, 11.3%), headache (19, 8.2%), and nausea (20, 8.7%). The most reported laboratory abnormality was anemia (24, 10.4%). 10 (4.3%) discontinued treatment due to anemia or other side effects..

Conclusion: SOF/VEL+RBV was safe and demonstrated relatively high efficacy for HCV retreatment; this regimen may be considered as an alternative retreatment regimen in LMIC.

10

Molecular Characterization of Hepatitis B Virus Infection in HIV Infected Adults On Antiretroviral Therapy in Nairobi, Kenya.

Ochieng L[1], Macharia R[1], Mwau M[2]
[1]University of Nairobi, Nairobi, Kenya, [2]Kenya medical Research Institute, Nairobi, Kenya

Background: Hepatitis B Virus and Human Immunodeficiency Virus infections are considerable universal health challenges. Simultaneous infection with these two viruses can cause severe and progressive liver disease, liver cancer and mortality. These challenges demand continuous surveillance for hepatitis B infection among HIV-infected populations to guide the prevention and treatment of patients. In Kenya, little is known about the molecular characteristics of HBV strains and surface antigen mutants, especially those that are circulating among HIV-infected persons. Thus, we sought to determine the prevalence and sequence diversity of hepatitis B virus amongst HIV co-infected patients on antiretroviral therapy in Nairobi County.

Methods: This laboratory-based cross-sectional study was conducted on samples collected from 10 sub-county health facilities in Nairobi. A total of 870 HIV-positive samples were screened for HBsAg using Enzyme-Linked Immunosorbent Assay. All surface antigen-positive samples were subjected to quantitative polymerase chain reaction and samples that had HBV DNA counts above 1000 copies/ml were amplified using nested PCR. The amplified products were sequenced and the generated HBV sequences were analyzed to identify HBV genotypes and possible S gene mutations.

Results and Conclusion: Of the 870 HIV-positive samples, 78 (8.97%) tested positive for HBV. Of these 78 samples, 38 (48.72%) had detectable HBV DNA viral copies from which 34 (89.47%) had HBV DNA counts above 1000 copies/ml. Twenty-six (76.47%) samples were identified as HBV genotype D and 8 (23.53%) as genotype A. The S gene mutations associated with failure of diagnosis (Y100*, R122K, N143S, V168A) and with vaccine escape (T114S, Y134F, G145V, N146K, T148P) were detected in varying frequencies in the population. This study confirms that the prevalence of HIV/HBV co-infection in Nairobi county is 8.97% (95% CI 7.24%-11.06%). The R122K and Y134F are the most predominant mutations circulating among this studied group.

Recommendations: Subsequent studies should focus on establishing the clinical significance of the different HBV strains and mutations found in this population to help bring the disease under control. Also, knowledge of circulating HBV genotypes and mutations is needed to inform vaccine optimization and diagnostic tool development. Finally, healthcare workers should be frequently trained on the clinical management of HIV/HBV co-infection.

11

Compared to the Wild-Type, the G1862T Mutant of Hepatitis B Virus (HBV) Induces Upregulation of Fibronectin Expression and Wnt/β-catenin Pathway in Vitro

Deroubaix A[1,2], Padarath K[1], Kandhavelu J[3], Stoychev S[4], Naicker P[4], Penny C[2,3], Kramvis A[1]
[1]Hepatitis Virus Diversity Research Unit, Department of Internal Medicine, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa, [2]Life Sciences Imaging Facility, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa, [3]Oncology Division, Department of Internal Medicine, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa, [4]Council for Scientific and Industrial Research, Biosciences, Pretoria, South Africa

Hepatitis B virus (HBV) is endemic in South Africa and is the leading cause of hepatocellular carcinoma (HCC) in this region, where subgenotype A1 prevails. G1862T in the precore region is characteristic of subgenotype A1. This mutation found in 25% of HBV chronic carriers is frequently found in HBV isolated from HCC patients. P25, the precursor of HBeAg, is targeted to the endoplasmic reticulum (ER), where it is post-translationally modified to HBeAg, for extracellular secretion. G1862T introduces an aromatic amino acid, which sterically hinders the signal peptide cleavage and leads to the accumulation of P25 in the ER. The aim of this work is to determine the effect of G1862T on cellular cancer pathways. HuH7 cells were transfected with subgenomic clones expressing HBeAg and precursors, with or without G1862T mutation, wtP25 and mtP25, respectively. Mass spectrometry analysis of the proteome, 5 days post-transfection, revealed that transfection with mtP25 led to the upregulation of the integrin pathway, where fibronectin, a component of the extracellular matrix, is 2-fold upregulated, compared to cells transfected with wtP25. Immunostaining/confocal microscopy confirmed the higher expression of fibronectin in the cell membrane/extracellular matrix, with thin and thick strands and more cellular filopodia in cells transfected with mtP25 than wtP25-transfected cells. Fibronectin, involved in immune evasion and maintenance of HBV replication, promotes an epithelial to mesenchymal transition where cells lose their adhesion and become more motile. Furthermore, nrbp1 protein expression was down-regulated by 1.7 fold. Immunostaining revealed that in cells transfected with mtP25, there was a partial relocation of β-catenin from the plasma membrane to the cytoplasm and the nucleus in 20% of the cells. Nrbp1 is involved in cancer cell proliferation through the regulation of Wnt/β-catenin pathway and a low nrbp1 expression is strongly correlated with development of other cancers. In conclusion, compared to wtP25, transfection of Huh-7 cells with mtP25 led to an enhanced expression of extracellular matrix, and an activation of Wnt/ β-catenin pathway proteins. This upregulation can promote cell invasion and may thus contribute to the carcinogenic potential of subgenotype A1 harbouring this mutation.

12A

Non-Alcoholic Fatty Liver Disease in Tanzania: Prevalence, Determinants, and Correlation with Triglycerides-Glucose Index in Overweight and Obese Individuals

Kilonzo S[1]
[1]*CATHOLIC UNIVERSITY OF HEALTH AND ALLIED SCIENCES, NYAMAGANA, Tanzania, United Republic of*

Background: Non-alcoholic fatty liver disease (NAFLD), which is closely associated with metabolic syndrome (MetS), is rarely reported in Tanzania, where MetS is prevalent. The purpose of this study was to determine the extent and associated factors of this condition in overweight and obese individuals and to correlate standard ultrasound diagnosis with triglyceride-glucose index (TyG) and TyG-body mass index (TyG-BMI).

Methods: A cross-sectional analysis was performed in 181 adult outpatients attending a general medical clinic. Demographic, clinical, and laboratory data were collected and analyzed using STATA 13. The presence of fatty liver was detected by ultrasound. The discriminatory power of TyG and TyG-BMI for diagnosing NAFLD was evaluated using Receiver Operating Characteristic (ROC) Curve analysis and the Area Under the ROC Curve (AUC) was reported.

Results: The overall prevalence of NAFLD was 30.4%. The prevalence's of NAFLD in patients with hypertriglycemia, class III obesity, class II obesity, and diabetes were 59.6%, 50%, 38%, and 37.5%, respectively. One third of patients with NAFLD had significant steatosis (stages 2 and 3). NAFLD was strongly predicted by hyperuricemia (≥ 360 µmol/L) (p=0.04) and TyG ≥ 8.99 (p=0.003). The best cut-off values of TyG and TyG-BMI to predict NAFLD were 8.99 [AUC 0.735; sensitivity 70.9%, specificity 79.3%] and 312 [AUC 0.711; sensitivity 60% and specificity 75.4%] respectively.

Conclusions: The prevalence of NAFLD is high among people with metabolic disorders in Tanzania, with a significant proportion of asymptomatic participants having an advanced disease. Simple screening tools such as TyG and TyG-BMI can be used to detect these cases early.

12B

Fatty Liver Disease and Its Correlates Among People Living With HIV Attending Care and Treatment Clinic at Temeke Regional Referral Hospital, Dar Es Salaam, Tanzania.

Mtonga F[1]
[1]MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES (MUHAS), ILALA, Tanzania, United Republic of

Background: Fatty Liver Disease (FLD) is projected to be the leading cause of chronic liver disease among People living with HIV (PLHIV)
Objectives: This study aimed at determining the prevalence and associated factors for Fatty Liver Diseases among People living with HIV attending Care and Treatment Clinic at Temeke Regional Referral Hospital in Dar es Salaam, Tanzania.

Methods: A hospital-based descriptive cross-sectional study was conducted between September and November 2020. Consenting adults aged ≥18 years and living with HIV were enrolled in the study. A structured questionnaire was used to collect socio-demographic, anthropometric measurements and clinical characteristics. Patients were fasted for a minimum of 8 hours before undergoing an abdominal USS, using B-mode and 3.5 MHz convex probe transducer (Dawei-DW 580, China, 2020) was done by a single trained investigator. FLD was defined as increase in liver echogenicity compared to the right kidney. Interpretation of USS images was done by a trained investigator and senior radiologist .Independent predictors of FLD were analyzed using multivariate logistic regression; p value of < 0.05 was considered to be statistically significant.

Results: A total of 454 patients were enrolled into the study. FLD was seen in 118 patients, making a prevalence of 25.9% (95% CI 22.0%-30.3%). Age group 40-60 years (aOR 1.74; 95% CI: 1.02 – 2.96 p=0.043), overweight (aOR 1.92; 95%CI: 1.05-3.51: p =0.034), obesity (aOR 3.46; 95% CI: 1.80 – 6.65: p < 0.001) and dyslipidemia (a OR: 2.63 95%CI: 1.58-4.39; p < 0.001) were significantly associated with FLD. HIV viral load status, duration on combination antiretroviral therapy had no association with FLD.

Conclusion and Recommendations: One out of four PLHIV had FLD. Factors associated with FLD were age 40-60 years, overweight, obesity and dyslipidemia. We recommend weight reduction and regular screening for FLD among PLHIV with above risk factors

13

Prevalence and Risk Factors of Metabolic Dysfunction-Associated Fatty Liver Disease (MAFLD) Among Adults With Chronic Hepatitis B Infection in the Gambia

Dibba B[1], Bojang L[1], Bah S[1], Touray F[1], Nyassi F[1], Lemoine M[1], Ndow G[1]
[1]MRC@LSHTM, Banjul, Gambia

Background: Metabolic dysfunction-associated fatty liver disease (MAFLD) is a global health concern. There is limited data on MAFLD in Africa. This study investigated the prevalence and risk factors of MAFLD among adults with chronic hepatitis B (CHB) infection in The Gambia, and the relationship between MAFLD and disease progression, treatment eligibility and mortality.

Methods: All CHB infected adults enrolled in the population based PROLIFICA study in The Gambia were included in this analysis. MAFLD was defined as steatosis in the presence of either type 2 diabetes, overweight/obesity or at least two of the following: high triglycerides, low HDL, visceral obesity, and hypertension. Disease progression was defined as change in liver stiffness from fibrosis to significant fibrosis or cirrhosis, and treatment eligibility was assessed using the EASL guidelines.

Results: Among 1,248 CHB infected adults enrolled in the PROLIFICA study with median age 36 years interquartile range of 13 and predominantly male (68%), 33 (2.64%) had MAFLD. Overweight/obesity (24%), hypertension (14%), diabetes mellitus (5%) and prediabetes (17%) were common in this cohort.
Among the 33 patients with MAFLD, 60% had steatohepatitis and 15% had NAS score >3. Risk factor analysis demonstrated a strong correlation between MAFLD and overweight or obesity (OR=23.35, p<0.0001) or hypertension (OR=2.38, p=0.048), but age, sex, diabetes mellitus, and prediabetes were not associated with MAFLD.
Over a 5-6 year follow up (2012-2018), 3 patients with MAFLD (9%) progressed to severe fibrosis/cirrhosis, 4 (12.1%) patients die and 2 (6%) were lost to follow up. Twenty patients (60.6%) met treatment eligibility based on viral load and alanine transaminase (ALT) levels. However, the event-free survival was similar for patients with MAFLD, irrespective of the presence of steatohepatitis or NAS score of ≥3.

Conclusion: Overweight/obesity and hypertension are significant risk factors for MAFLD among chronic HBV patients in The Gambia. Despite relatively low prevalence, MAFLD is associated with increased risk of liver disease progression and CHB treatment eligibility. The study underlines the urgency of implementing targeted interventions and continued surveillance of CHB patients with MAFLD, and the need for larger longitudinal studies to understand underlying mechanisms and survival outcomes.

14

Nonalcoholic Fatty Liver Disease Progression Rates To Cirrhosis And Progression Of Cirrhosis To Decompensation And Mortality: A Real World Analysis Of Medicare Data

Govina Aizoboah S[1]
[1]Center For Initiative And Development, Jalingo , Nigeria

Background: The nonalcoholic fatty liver disease (NAFLD) is a clinicopathological syndrome caused by genetic, environmental, and metabolic stress-related factors and clinically manifested as fat accumulation in hepatocytes. Specifically, this accumulation exceeds 5% of hepatic wet weight, or changes in the fatty content took place in over 1/3 of hepatocytes per unit area even though the overconsumption of alcohol can be expressly excluded.Pathologically, it may develop into nonalcoholic fatty liver, nonalcoholic steatohepatitis (NASH),fatty hepatic fibrosis and cirrhosis with disease progression.NAFLD is one of the most important causes of liver disease worldwide and probably destined to become the leading cause of end-stage liver disease in the coming decades, affecting both adults and children. Risk and timing associated with disease progression and mortality in NAFLD are poorly understood.

Aims: To evaluate the impact of disease severity, demographics and comorbidities on risk of mortality and time to progression in a large, real-world cohort of diagnosed NAFLD patients.

Methods: Claims data from a 20% Medicare representative sample between 2007 and 2015 were analysed retrospectively. Adults were categorised into disease severity groups: NAFLD/nonalcoholic steatohepatitis (NASH) alone, compensated cirrhosis, decompensated cirrhosis, liver transplant or hepatocellular carcinoma.Cumulative incidence of mortality and disease progression were calculated for each group and multivariate analyses performed adjusting for demographics, comorbidities and disease severity.

Results: A total of 10 826 456, patients were assessed and the prevalence of NAFLD was 5.7% (N = 621 253). Among patients with NAFLD, 71.1% had NAFLD/NASH alone and 28.9% had NAFLD cirrhosis. Overall, 85.5% of patients had hypertension, 84.1% dyslipidemia, 68.7% had cardiovascular disease and 55.5% diabetes.The cumulative risk of progression of NAFLD to cirrhosis, and compensated cirrhosis to decompensated cirrhosis was 39% and 45%, respectively.The independent predictors of progression included cardiovascular disease, renal impairment, dyslipidemia and diabetes.The cumulative risk of mortality for NAFLD, NAFLD cirrhosis, decompensated cirrhosis and hepatocellular carcinoma was 12.6%, 31.1%, 51.4% and 76.2%, respectively.

Conclusions: The present report (a) demonstrates that NAFLD is grossly underdiagnosed in real-world clinical settings and (b) provides new evidence on the progression rates of NAFLD and risk of mortality across the spectrum of severity of NAFLD and cirrhosis.

15

Establishing the Hepatitis B and C Prevention and Management program: Malawi's experience

Mzumara W[1], Stockdale A[3], Hiebert L[2], Kachala R[1], Nyirenda R[1]
[1]Directorate of HIV, STI and Viral Hepatitis, Ministry of Health, Lilongwe, Malawi, [2]Coalition of Global Hepatitis Elimination, Atlanta, United States of America, [3]University of Liverpool, Liverpool, United Kingdom

Background: In 2016, following endorsement of the Elimination of Viral Hepatitis by 2030 strategy and a program assessment conducted by WHO, the Ministry of Health (MoH) officially established the Viral Hepatitis program. MoH, through the Directorate of HIV, STI, and Viral Hepatitis, integrated testing and treatment services with support from the Global Fund. Point of care hepatitis B screening (SD Bioline) was introduced into antenatal care, sexual health, and community testing services.

Methods: In 2021, Malawi received Coalition for Global Hepatitis Elimination (CGHE) funding to support the collection of baseline data, development of a national guideline, and an implementation framework. We developed standardized data collection tools for testing and treatment. Testing tools for HIV, syphilis, and hepatitis were integrated with monthly reporting. ScanForm technology was used to efficiently digitize anonymised data from testing registers. A hepatitis treatment card was developed to facilitate follow-up of tested patients. We present data from the hepatitis B screening programme from December 2022- May 2023 from antenatal services, sexual health and community or voluntary testing.

Results: Among 24,921 women tested in antenatal services, median age was 23 (IQR 20, 28). Overall, 1.4% (95% CI: 1.2 – 1.5%) were HBsAg positive. The highest prevalence was observed among women aged over 30 (among 30-39- and 40-45-year-old groups, 2.3% and 4.0% respectively) and lowest among younger women (0.3% (0.2- 0.5) in ages <20 years). In sexual health services, median age was 27 (IQR 23, 33) and 1506/3322 (45%) were male; HBsAg prevalence was 1.1% overall (35/3322), 0.7% among women and 1.5% in men (p=0.055). In community or voluntary testing, median age was 27 (IQR 22, 33), and 61% were male. Overall prevalence was 2.3% (IQR 1.7, 3.0) , highest among the 30-39 year group (4.6% 95% CI 3.0-6.8) and lowest among those aged <20 (0.3%, 95% CI 0.02- 2.0). Nationally, over 980 patients were eligible for treatment and were treated with tenofovir/lamivudine.

Conclusion: This decentralised testing approach has led to more than 48,000 people accessing testing services followed by linkage to care. The use of technology has facilitated epidemiological surveillance of point-of-care testing data.

16

Long-Term Outcomes of a Population-Based Cohort of Chronic Hepatitis B (CHB) Patients in West Africa.

Ndow G[1,2], Shimakawa Y[3], Leith D[4], Bah S[1], Bangura R[1], Bojang L[1], Ceesay A[1,5], Bola-Lawal Q[1], Touray A[1], Jatta A[1], Barry J[1], Nyassi F[1], Lambert G[2], Lambert A[2], Ingiliz P[6], Bittaye S[7], Haddadin Y[8], Vo Quang E[1,6], Chevaliez S[6], Lo G[9], Toure-Kane C[9], Chemin I[5], Njie R[7], D'Alessandro U[1], Thursz M[2], Lemoine M[1,2]

[1]MRC Unit The Gambia at LSHTM, Fajara, Gambia, [2]Imperial College London, London, United Kingdom, [3]Institut Pasteur Paris, Paris, France, [4]University of Dundee, Dundee, United Kingdom, [5]INSERM, Lyon, France, [6]University Hospital Henri-Mondor, Creteil, France, [7]Edward Francis Small Teaching Hospital, Banjul, The Gambia, [8]University of Sussex, Brighton, United Kingdom, [9]IRESSEF, Diamniadiou, Senegal

Background: Longitudinal data in untreated chronic hepatitis B (CHB) infected patients in Africa is scarce and urgently needed to inform guidelines. We assessed the long-term clinical outcomes of a population-based cohort of CHB subjects in West Africa.

Methods: Between 2019-2021, we reassessed CHB patients who were enrolled in the PROLIFICA cohort in The Gambia between 2011-2014. This analysis focused on participants ineligible for treatment at baseline according to EASL 2012 criteria. Mortality was assessed using death certificates and verbal autopsy. Liver disease progression was defined as proportion of patients who became eligible for treatment or developed significant fibrosis (LSM≥7.8kPa), cirrhosis (LSM≥9.5kPa), or hepatocellular carcinoma (HCC).

Results: At baseline, 93 of 943 participants fulfilled EASL treatment criteria, leaving 850 patients who were ineligible and untreated. After a median follow-up of 6.0years (IQR:5.5-6.8), 279 (32.8%) participants were lost to follow-up and 27/850 (3.2%) died, including 10 liver-related deaths, giving an overall mortality rate at 584/100,000 person-years (IQR:400-852). After adjusting for sex and age, baseline APRI ≥2 was strong predictor of overall mortality (OR:7.2 (1.7-31.3), p=0.008).

544/850 (64.0%) had a full liver reassessment: 321/544(59.0%) were males, median age: 41 (37-48) years, median BMI: 22.8 (20.1-26.1) kg/m2, and none reported excessive alcohol intake. Two-thirds (348/544, 64.0%) were inactive chronic carriers, 131/544 (24.0%) had viral load ≥2,000IU/ml, 49/541 (9.1%) had ALT ≥40IU/L and 36/540 (6.7%) had significant liver fibrosis including 13 (2.4%) with cirrhosis and 1 with decompensated cirrhosis. No HCC was detected. Incidence of HBsAg loss was 0.69 (23/544, 95% CI:0.46-1.04) and higher among females (OR:2.56 (1.03-6.34) p=0.042).

Overall, 39/544 (7.2%) reassessed patients had liver disease progression: 3.3% newly eligible for treatment, 3.9% liver fibrosis progression, and 15/540 (2.8%) new-onset cirrhosis.

Amongst patients with no significant liver fibrosis at baseline, 32/492 (6.5%) had liver disease progression including 13 (2.6%) with cirrhosis. In multivariate analysis adjusting for sex and age, baseline HBV DNA ≥2,000IU/mL was associated with liver disease progression (OR:2.8, 95% CI:0.9-8.5, p=0.027).

Conclusion: This longitudinal study indicates that liver events are not negligible in ineligible and untreated CHB patients, suggesting monitoring should be maintained with special focus on patients with HBV DNA ≥2,000IU/mL.

17

Implementation of HBV Screening in Kilifi, Kenya: Real World Insights to Inform Clinical Service Development and Translational Studies.

Downs L[1,2], Chirro O[2], Zaharani M[2], Aliyan N[3], Andersson M[4,5], Githinji G[2,6], Matthews P[7,8,9], Etyang A[2]

[1]University of Oxford, Oxford, United Kingdom, [2]KEMRI-Wellcome Trust Research Programme, Kilifi, Kenya, [3]Kilifi County Hospital, Kilifi, Kenya, [4]Oxford University Hospitals, Oxford, United Kingdom, [5]Radcliffe Department of Medicine, University of Oxford, Oxford, United Kingdom, [6]Department of Biochemistry and Biotechnology, Pwani University, Kilfii, Kenya, [7]The Francis Crick Institute, London, United Kingdom, [8]Division of Infection and Immunity, University College London, London, United Kingdom, [9]University College London Hospital, London, United Kingdom

Background: Hepatitis B virus (HBV) has been highlighted by the World Health Organisation (WHO) for elimination as public health threat by 2030. However, only 2% of those living with chronic hepatitis B (CHB) in the WHO Africa region are diagnosed, and only 0.1% are on treatment. HBV prevalence in Kenya is between 2-8%; significant scale up of diagnostics and treatment should be a priority.

Methods: We set up an HBV testing programme at Kilifi County Hospital (KCH), Kilifi, Kenya, through KEMRI-Wellcome Trust Research Programme (KWTRP). All adults attending KCH outpatient department (OPD) were invited for screening and characterisation. The protocol was developed through discussion with local stakeholders (ethics approval SERU 4565, OxTREC 22-23). We describe our experiences to inform the development of other clinical research to support progress towards HBV elimination.

Results 1 – Challenges:
- Procurement: The Determine HBsAg point of care test (POCT) (Abbott) has the most robust accuracy data in African settings, however local distributor issues have caused procurement challenges.
- Vaccine access: The adult monovalent vaccine is not locally available.
- Fibroscan Access: Fibroscan is not accessible within Kilifi.
- Treatment: Prior to study initiation, only tenofovir/lamivudine combination therapy was available.

Results 2 – Positive Outcomes:
- Study initiation has created HBV awareness. We are undertaking regular patient education.
- Tenofovir monotherapy has been procured.
- Vaccine is inexpensive (67 KES per adult dose - around $0.50). We plan to procure HBV vaccine for staff and close contacts using existing vaccination infrastructure.
- A Fibroscan machine is being loaned to undertake liver stiffness assessment.
- We are providing teaching sessions for staff ensuring capacity building and HBV education

Conclusions:
- Accessible, well validated HBsAg POCTs and HBV DNA PCR need to be affordable and available.
- Liver elastography should be accessible, or other methods of liver fibrosis evaluation are needed.
- Monovalent HBV vaccine should be routinely available, including birth dose. Central rollout should be considered, rather than relying on local policy or individual research projects.
- HBV testing and care should be accessible to the wider population, not just those enrolled in a research study.

18

Assessment of Hepatocellular Carcinoma Differences in Urban and Rural Africa Through Satellite Imaging Analysis

Mann E[1], Akambase J, Searle K, Debes J
[1]*University Of Minnesota, Minneapolis, United States*

Background: Sub-Saharan Africa carries one of the highest burdens of hepatocellular carcinoma (HCC) in the world, with hepatitis B (HBV) as the most common cause. Studies suggest important cancer differences in rural versus urban settings, but no studies in this field have been performed in Africa.

Methods: We performed a systematic review and meta-analysis of studies on HCC in Africa to assess mean age, proportion of males, and of HBV positive patients in relation to location of the study. Using land-use/land cover data from the European Space Agency, we categorized locations and calculated the distance from each study site to the closest rural area (agricultural land). Distances from the nearest non-urban area ranged from 0.29 to 12.67 kilometers with a mid-point of 6.3 km (used for urban-rural reference). Log binomial models were fit to estimate the association between distance to the closest rural area with HBV and/or gender of HCC patients.

Results: 978 studies were retrieved. After removing duplicates and reviewing for relevance, fifty-seven articles were included. This represented data on 10,608 patients across 19 countries in Africa in the meta-analysis. 74% of patients were male and the weighted mean age was 52.5 years. Proximity to rural area was associated with increased risk of HBV after controlling for country. Locations less than 6.3 km from a non-urban area had 1.25 times higher risk of HBV-HCC (95% CI 1.16 – 1.34, p <0.001) compared to patients in locations 6.3km or greater from a non-urban area. When analyzing only studies in West Africa, locations less than 6.3 km from a non-urban area had 1.17 times higher risk of HBV-HCC (95% CI 1.08 – 1.27, p <0.001) compared to patients in locations 6.3km or greater from a non-urban area. No association was found between proximity to a rural area and gender or age (52.6 versus 52.2 years).

Conclusion: We found an association between proximity to a rural area and risk of HBV-associated HCC in Africa in a first study of its kind. Further research is needed to understand the burden of HBV-related HCC in Africa across rural and urban areas.

19

Platelet Count to Spleen Diameter Ratio as a Predictor of Oesophageal Varices in Patients With Liver Cirrhosis at Muhimbili National Hospital Dar Es Salaam, Tanzania.

Absheikh Gillah B[1]
[1]MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES (MUHAS), Ilala, Tanzania, United Republic of

Oesophageal varices, a common complication of liver cirrhosis, contribute significantly to morbidity and mortality worldwide. However, the current gold standard for varices screening, oesophageal gastro-duodenoscopy (OGD), is invasive and expensive, limiting its accessibility in developing nations like Tanzania. This study aims to validate the use of the Platelet Count/Spleen Diameter Ratio (PC/SD) as a cost-effective and non-invasive alternative for predicting gastroesophageal varices in liver cirrhosis patients at Muhimbili National Hospital.

The retrospective analysis involved 126 patients with hepatic cirrhosis of various causes. Patients underwent OGD, spleen diameter measurement through ultrasound, and complete blood count for platelet count assessment. The Child-Pugh classification was used to categorize patients based on disease severity. Univariate analysis was conducted to identify factors predictive of oesophageal varices. The accuracy of the PC/SD ratio was assessed using sensitivity, specificity, positive predictive value, negative predictive value, positive likelihood ratio, and negative likelihood ratio. Receiver operating characteristic curves were utilized to compare the accuracy of the PC/SD ratio with individual platelet count and spleen diameter measurements in predicting varices. Additionally, a post hoc analysis evaluated the performance of a composite marker, PC/SD+SD.

Of the 126 patients, 64.3% were male, with an average age of 44.96 years. Viral hepatitis (59.5%) and alcoholism (28.6%) were the most common causes of hepatic cirrhosis. Oesophageal varices were detected in 81% of patients during endoscopic procedures. A PC/SD ratio below 909 showed a high predictive value with an area under the receiver operating characteristic curve of 0.96, sensitivity of 90.2%, specificity of 83.3%, positive predictive value of 95.8%, negative predictive value of 66.7%, positive likelihood ratio of 5.4, and negative likelihood ratio of 0.1. The PC/SD ratio outperformed individual platelet count and spleen diameter measurements in predicting the presence of varices.

In conclusion, this study validates the use of the PC/SD ratio as an affordable and non-invasive tool for detecting oesophageal varices in liver cirrhosis patients. Implementing this ratio as a screening method can enhance access to timely interventions and reduce the burden of upper gastrointestinal bleeding, especially in resource-constrained settings.

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ABSTRACTS
POSTER PRESENTATIONS

20

The Impact of Hepatitis B Discrimination in Africa

Freeland C[1], Owusu-Ansah T[2], Adda D[3], Kabagambe K[4], Desalegn H[5], Ndow G, Yousif S, Abdalla H, Kheir O, Qureshi A[1], Cohen C[1]
[1]Hepatitis B Foundation, Philadelphia, United States, [2]Hepatitis Foundation of Ghana, , Ghana, [3]World Hepatitis Alliance, , , [4]National Organization for People Living with Hepatitis B, , Uganda, [5]St. Pauls Hospital MMC, , Ethiopia

296 million individuals live with chronic hepatitis B worldwide including 80 million within the African continent; most have not been diagnosed and remain at risk of liver disease. For those diagnosed, there are frequently reported experiences of stigma and discrimination. Discrimination specific to hepatitis B has not been widely documented in the literature, particularly in the African context. This study aims to describe the experience of discrimination, document its impact, and shed light on its significant effects on those living with hepatitis B in Africa. In May of 2021, the Hepatitis B Foundation launched a hepatitis B discrimination registry to document and track discrimination globally and provide an opportunity for those directly impacted by discrimination a space to share their experiences.

The survey has been distributed to patient-focused listservs and social media networks and through community-based organizations around the globe. Descriptive data were analyzed using SPSS software and qualitative data (open-ended responses) were analyzed using qualitative data techniques. Globally, 455 individuals responded to the registry 138 individuals from the African continent (Nigeria N=49), Uganda (N=25), Ethiopia (N=12), Ghana (N=12, Sierra Leone (N=5), Sudan (N=5), Kenya (N=4), Cameroon (N=3), Egypt (N=3), and other countries less than 2%. Individuals identified as being under the age of 39 years (85.9%), and male (65.4%) with personal experiences of discrimination (78.8%). When asked where the discrimination occurred, most shared their employer discriminated against them (44.2%), followed by an educational setting (22.5%), within a health facility or hospital (20.8%), when applying for an immigration or travel visa (16.7%), or within a private residence or home (11.7%).

Qualitative analysis revealed most individuals reported being denied employment opportunities because of hepatitis B (N=45) and some of this is related to work visas abroad.
In contrast, others experienced discrimination within healthcare settings, personal relationships, or education. Our data demonstrate that hepatitis B discrimination is widely occurring within the African context and significantly impacts the quality of life for those within Africa. Hepatitis B discrimination can result in significant social and economic loss, inhibit employment, educational and immigration opportunities, and can be found within healthcare settings.

21

Mass Screening of Hepatitis B and C Viruses' Infections in General Population of Burkina Faso: Epidemiology and Impact of Hepatitis B Vaccine

Sanou A[1,2], NAPON-ZONGO D[3,4], Coulibaly A[5], Traoré I[1,6], OUATTARA A[4,7], Ilboudo A[1,8], ZOURE A[1,2], ZIDA S[1], OUATTARA M[1,2], DERA A[1,2], Konaté D[2,9], Kyelem E[1], Nikiéma A[1], Lankoandé D[4,10], Ilboudo D[4,11], Kania D[12,13]
[1]Laboratoire de Recherche sur les Maladies Infectieuses et Parasitaires (LR-MIP), Institut de Recherche en Sciences de la Santé (IRSS), Bobo-dioulasso, Burkina Faso, [2]Département des laboratoires, Centre « Assaut-Hépatites », Bobo-Dioulasso, Burkina Faso, [3]Institut Supérieur des Sciences de la Santé (INSSA), Université Nazi Boni, Bobo-Dioulasso, Burkina Faso, [4]Département Clinique, Centre « Assaut-Hépatites », Bobo-Dioulasso, Burkina Faso, [5]Laboratoire de Recherche en Santé Publique et Nutrition (LR-SPN), Institut de Recherche en Sciences de la Santé (IRSS), Bobo-Dioulasso, Burkina Faso, [6]Centre de Recherche Biomoléculaire Pietro Annigoni (CERBA), Ouagadougou, Burkina Faso, [7]Département de pédiatrie, Centre Hospitalier Universitaire Souro SANOU (CHUSS), Bobo-Dioulasso, Burkina Faso, [8]Département Méthodologie et gestion des données, Centre « Assaut-Hépatites », Bobo-Dioulasso, Burkina Faso, [9]Laboratoire de Biologie Moléculaire, Département des Laboratoires de Biologie Clinique, Centre MURAZ, Bobo-Dioulasso, Burkina Faso, [10]Service des Urgences Médicales, Centre Hospitalier Universitaire de Bogodogo, Ouagadougou, Burkina Faso, [11]District Sanitaire de Banfora, Direction Régionale de la Santé des Cascades, Banfora, Burkina Faso, [12]Centre MURAZ, Institut National de Santé Publique, Bobo-Dioulasso, Burkina Faso, [13]Université Catholique d'Afrique de l'Ouest, Unité Université de Bobo, Bobo-Dioulasso, Burkina Faso

Background: Updated data on seroprevalences of hepatitis B and C viruses (HBV, HCV) are needed to adapt control strategies. In this study, we aimed to: (i) estimate seroprevalences of HBsAg carriers

and HCV exposure in the general population, and (ii) determine the impact of vaccination on HBV circulation since its introduction in 2006 in the Expanded Program on Immunization (EPI).

Methods: From October 2020 to October 2022, a mass screening campaign was conducted in ten (10) cities of Burkina Faso. Consenting participants of all ages and genders were screened for viral markers (HBsAg, anti-HCV) using rapid diagnostic tests (RDTs). The proportions of HBsAg carriers and HCV exposure were calculated using Stata, and logistic regression was used to assess the impact of HBV vaccination on HBsAg carriage.

Results: A total of 15,650 participants were enrolled. Women represented 51.4% and age ranged from 1 to 97 years. All participants were screened for HBsAg and 7507 participants for anti-HCV. Overall, the seroprevalence of HBsAg was 8.8% and 2.6% for anti-HCV. Age, gender, and residence were associated with HBV infection.

Conclusion: The prevalences of HBV and HCV infections are still high in Burkina Faso. Prevention strategies, including initial mass screening with RDTs and vaccination, need to be intensified.

22

Overcoming Barriers to Care Delivery for Viral Hepatitis: Insights From a Decade of Civil Society Experience

Ande R[1,2], John O[1,2]
[1]Centre For Initiative And Development/Chagro Care Trust, Jalingo, Nigeria, [2]CFID Diagnostic Centre, Jalingo, Nigeria

Background: Viral hepatitis is a significant public health concern in Nigeria, associated with high morbidity and mortality rates. Despite available prevention and treatment strategies, many Nigerians face barriers to accessing timely and appropriate care for viral hepatitis. Civil society organizations play a crucial role in addressing these gaps and challenges in healthcare delivery.

Objectives:
1. This abstract sought to explore the experiences of the Center for Initiative and Development (CFID) /Chagro Care Trust (CCT), a patient-driven charity organization, in achieving the GHSS 2030 goal of viral hepatitis elimination through community-based awareness creation, FREE HBsAg and Rapid Antai HCV testing, and linkage to care.
2. To assess the roles of CSOs and patient groups in improving access to hepatitis care, using CFID/CCT as a case study, and provide recommendations to strengthen their impact.

Methods:
We conducted a retrospective analysis of Free HBsAg testing data over a 10-year period. The study included walk-in clients accessing free HBsAg testing in CFID/CCT. The analysis excluded data from other project activities and community outreaches. Additionally, we surveyed patient folders at specialist hospital and FMC Jalingo to evaluate the treatment status of referred individuals.

Results:
HBsAg testing:
• A total of 19,136 individuals were tested.
• 2,487 individuals tested positive and linked to care.
• 215 individuals were initiated on treatment based on WHO 2015 guidelines
• 76 are currently receiving treatment
• 139 are lost to follow up
Hepatitis B vaccination:
• 16,649 individuals referred for hepatitis B vaccination.
• 15,800 started the first dose, 8,750 received the second dose
• 4,875 completed the three-dose regimen.

Conclusion: These findings highlight the significant impact of CFID/CCT in providing hepatitis B Cascade of care over the past decade. However, challenges persist in achieving treatment retention and completing the vaccination regimen. Factors contributing to these challenges include; Inadequate knowledge on Hepatitis management by Healthcare workers, adherence issues, weak healthcare system and financial limitations. Addressing these challenges requires increased advocacy, government investment in healthcare, and continued support for CSOs to combat viral hepatitis and enhance access to care.

23

Access to Care by Vulnerable Hepatitis B Clients During and Post COVID-19 Pandemic at Community Level in South-Western Uganda

Arafat B[1], Robinah M[2]
[1]Great Lakes Peace Centre/Bwera General Hospital, Kasese, Uganda, [2]Bwera General Hospital, KASESE, Uganda

Hepatitis B is highly prevalent in Uganda,is often highest among people in rural areas,people of lower-socio economic status According to the Uganda Cancer Institute,80 per cent of Uganda's liver cancer cases are caused by hepatitis B.Like many countries,there is considerable misunderstanding of hepatitis B, which results in stigma and discrimination.GLPC has been providing hepatitis B education and services in the community.

GLPC is dedicated to breaking down harmful misconceptions about viral hepatitis.
Description of model of care.
During this COVID19 pandemic most of hepatitis clients come from distant and mountainous areas, we had to walk on foot ,ride bicycle and motorcycle to deliver medicine to them as the restrictions were put in place per lockdown in response to COVID19.

GLPC Advocacy is a platform to inform, educate and communicate about viral hepatitis. It provides a vehicle to echo out the concerns of viral hepatitis infection in the community.

We awareness raising about hepatitis B and C to community members. We provide hepatitis B including testing,vaccination,and linkage to care.We also provide psycho-social support and help with reintegration into the community. GLPC decided to spend my last atom of energy informing, educating and communicating about viral hepatitis to help tackle this dangerous lack of knowledge at schools, worship places, marriage ceremonies and burial gathering offering psychosocial support and counseling.

To date, we have tested 2500 people for hepatitis B in community, (6.5%) had active hepatitis B infection, and they have all been linked to care at health facilities in our region. Many of these people live in mountainous areas and during COVID-19 the only people who were allowed to travel were healthcare workers. To help these people maintain and monitor their treatment, we travelled by motorbikes, bicycles and by foot to deliver medications and take blood samples to monitor viral load and ensure viral suppression. Our testing, vaccinating and linkage to care has impacted about 319 villages in our region.

Our program has been able to engage marginalized people who have been in prison, health facilities, community and link them to hepatitis B care.

24

Global Hepatitis B Community Advisory Board: Expectations, Challenges, and Lessons Learned

Zovich B[1], Racho R[1], Borondy.Jenkins F[1], Sapp K[1], Ibrahim Y[1], Cohen C[1], Machado T[1]
[1]Hepatitis B Foundation, Doylestown, United States

Background: The role of community advisory boards (CABs) in healthcare settings has been shown to be critical for delivering patient-centered care models. In the clinical research setting, however, this role has been less well-defined. Most available literature explores the role of CABs within local healthcare delivery settings, with little guidance about global representation in such councils. Hepatitis B is a disease that is surrounded with misinformation, leading to considerable stigma and discrimination. In 2022, the Hepatitis B Foundation (HBF) convened the first global hepatitis B and delta CAB with 23 members from 17 countries, representing regions with the largest hepatitis B and delta disease burden. One year later, members of the CAB were invited to recount their experiences, share lessons learned, and offer recommendations to HBF and others interested in establishing a global community advisory board.

Methods: Three focus group discussion sessions were held with CAB members. Questions focused on motivations for joining the CAB, challenges in contributing to the CAB activities and mission, and lessons learned, especially in terms of adjusting

expectations and interactive styles for work within a global team. Grounded theory analysis was used to generate hypotheses about reasons behind CAB members' participation - thereby risking the disclosure of their hepatitis B status - as well as related implications, challenges to participating in a global patient council, and possible lessons learned.

Results: CAB members have shown enthusiasm for and dedication to participating in the hepatitis B and delta CAB. There are lessons learned surrounding funding, recruitment of CAB members to participate and take a lead on some CAB initiatives, as well as gaining a more robust understanding of how sociodemographic factors influence individual approaches to the advancement of a functional cure for hepatitis B and effective hepatitis delta treatments.

Conclusion: Establishing the hepatitis B and delta community advisory board with global representation for a stigmatized infectious disease is worth the effort, despite the societal and organizational challenges.

25

The Sensitization on Hepatitis Infections Prevention, Transmission and Vaccination

Ayu A[1]
[1]Devatop, Sapele, Nigeria

Background: Hepatitis B virus infection is a priority job related disease that has both serious public and private health implications. Hepatitis B vaccine is the first anticancer vaccine that has outstanding record of safety and effectiveness and 95% effective in preventing children and adults from developing chronic infection.

Methods: The study design was a cross-sectional descriptive study. All the 100 workers, Non workers and customers of Time off hotel, gym and Resort in Sapele Delta state Nigeria who gave their consent to participate in the study were enrolled. Pre-tested, structured, self-administered questionnaire was used for data collection.

Results: Majority (70%) had No knowledge of hepatitis B infection and vaccination and the mean knowledge. Majority (90.) didn't know that hepatitis B virus can be acquired through a needle stick injury. Minority (30%) were aware of the existence of an effective vaccine against hepatitis B infection; however, only 30% knew correctly that a post hepatitis B vaccination test is necessary to confirm protection. Minority (30%) knew that a complete dose of hepatitis B vaccine is 95% effective; however, only % knew for how long the vaccine protects. Only 36.9% knew correctly that hepatitis B virus is 100 times more infectious than HIV. Attitude towards hepatitis B vaccination sensitization was good among all of the respondents.Majority (70.5%) had poor practice of hepatitis B vaccination.majority (67.6%) gave non-availability of the vaccine as reason for this.

Conclusion: The respondents had less knowledge of hepatitis B Infection, prevention and vaccination. There is therefore need to Develop a plan for Public Health Campaign for HBV to raise awareness and Promote prevention strategies, Creating clear and concise messages that educate the public about Hepatitis B, Using high quality materials like visuals, billboards, Social Media, Local Radios and community Event, Recruit partners with local organizations, community leaders and health care providers and other civil health care society with adequate information on blood-borne viruses eventually translate into a good practice of hepatitis B infection Causes, Prevention ,transmission and Vaccination Sensitization .

26

Dimension of Hepatitis Disease and Mental Health Amongst Hepatitis Patients in Tanzania

Waryoba T[1]
[1]Organization For Medical Outreach To Communities-omoc, Dar Es Salaam, Tanzania, United Republic of

Hepatitis is a global health concern which affects millions, extends its gap beyond physical manifestation. Africa is disproportionally affected with viral hepatitis and approximately 90 million people living with hepatitis B and C in sub Saharan Africa. Hepatitis related liver cancer and mortality rate are increasing day to day in Africa. In 2015, an estimated 4.7% of children under five were positive for hepatitis B surface antigen, well done the global average of 1.3%. One in four of HBV

infected children are at risk of death from hepatitis B in later life.

This abstract will be shedding light on the often overlooked psychologically dimensions experienced by the individuals living or diagnosed with this liver disease. Through a review of the previous literature and researches, this abstract aims to deepen our understanding of the mental health challenges faced by hepatitis patients and the implications for their overall well-being. Hepatitis is a chronic and potentially life-threatening condition which places a considerable burden on an individual and family level not only physically but also psychologically. Hepatitis patients are common presented with psychological distress like Depressive symptoms, generalized anxiety disorders, and low self-esteem. Highlighting the impact of these mental health challenges on the individual's activities, treatment adherence and overall, the prognosis.

The abstract will also explore the potentially underlying factors contributing to mental health amongst hepatitis patients. These may include, the myth about hepatitis disease, social stigma surrounding hepatitis, fear of transmission, financial strain, and the side effects of the ant viral medications that may be initiated. By understanding these factors this will help to formulate different interventions to address the specific mental support of this affected group. Objectives: Dimension of Hepatitis disease and mental health amongst hepatitis patients in Tanzania.

With recognizing the importance of integrated care, we emphasize the necessity of incorporating mental health assessment and interventions with hepatitis management. By adopting the multidisciplinary approach, health care providers can identify and address mental health concerning alongside the physical aspect of the disease. Psychosocial support, counselling and education programs must be employed as important components in promoting the overall quality of life.

27

Coinfection Hépatite B/VIH et efficacité des ARV sur les deux virus dans la cohorte de patients suivis au Service des Maladies Infectieuses et Tropicales du CHU Point G.

Cissoko Y[1], Djeneba F[2], Aichata D[1], Fadimata A[1], Tatiana Marlene M[2], Aminetou C[2], Mariam S[1], Yama D[1], Dramane S[1], Issa K[1,2], Oumar M[1], Assetou F[1], Dao S[1,2]

[1]Point G Teaching Hospital, Bamako, Mali, [2]Faculty of Medicine and Dentistry, Universiteé des Sciences, des Techniques et des Technologies de Bamako, Bamako, Mali

Background: Le VIH et le VHB donnent deux infections liées et mutuellement délétères. Nous avons étudié la prévalence de la coinfection VIH/VHB et l'efficacité des ARV chez les PvVIH suivies en ambulatoire au service de Maladies Infectieuses du CHU Point G, Mali.

Methods: Il s'agit d'une étude analytique de la cohorte de patients infectés par le VIH et le VHB suivis sous ARV en consultation au service des Maladies Infectieuses du CHU du Point G ayant plus d'un an de suivi au 31 mai 2023. La sérologie VIH et l'Ag HBs ainsi que la charge virale des deux virus ont été réalisés chez tous les patients. Les données ont été saisies et analysées avec le logiciel SPSS.

Results: La file active des patients était de 452 dont 45 patients. La séroprévalence de l''Ag HBs était de 9,29% avec 42 patients coinfectés. Les femmes étaient majoritaires avec un sex ratio= 0,45. L'âge moyen était de 44,3 ± 11,6 ans pour l'ensemble des PvVIH vs respectivement de 0,66 et 43,1 ± 15,1 ans pour les patients coinfectés. Le poids moyen des patients augmentait significativement avec le suivi (p<10-3). Dans leur histoire, 57,1% des patients avaient des manifestations cliniques liées au Sida. Le VIH1 est retrouvé chez 98% des patients. Le schéma thérapeutique prédominant était TDF/3TC/DTG chez 74,9% des patients. La dernière charge virale réalisée était indétectable chez 69,9% des patients, le taux de TCD4 étaient > 350 cellules/mm3 chez 61,6% des patients. La charge virale du VIH était > 1000 cp/ml chez 30,1 % des

patient tandis que la moyenne de celle du VHB chez les patients ayant plus de145 mois de traitement était de 760503,3 ± 1310913,9 cp/ml. L'observance était mauvaise pour 35,2% des patients. Le facteur lié à l'observance était la résidence éloignée du Point G. Il existe une relation statistiquement significative entre l'observance la charge virale.

Conclusion: La prévalence de la coinfection VIH/VHB dans file active au service des maladies infectieuses du CHU du Point G est de 9,3% et les charges virales des deux virus détectables après plusieurs mois de traitement attirent l'attention.

28

Spot Urine Sodium to Potassium Ratio as a Tool to Assess Severity and Mortality among Patients with Decompensated Cirrhosis Having Ascites

Azam M[1], Islam S[2]
[1]BIRDEM Academy, Dhaka, Bangladesh, [2]Sheikh Russel National Gastroliver Institute and Hospital, Dhaka, Bangladesh

Background: Decompensated cirrhosis of liver is considered as a systemic disease affecting the functions of several other organs. Renal function is an independent prognostic factor for patients with decompensated cirrhosis, but assessing renal function through glomerular filtration rate are not convenient especially for routine use. Previous study found that spot urinary sodium to potassium ratio (UNa/K) was associated with renal dysfunction which influences the severity and outcome in decompensated cirrhosis of liver patients having ascites.

Methods: This longitudinal study was conducted at the Department of GHPD, BIRDEM Academy, Dhaka, Bangladesh. A total of 150 patients with decompensated cirrhosis with ascites were enrolled in this study.

Results: Age was 59.0±12.91(mean±SD) years, male predominance was observed (52%). The UNa/K ratio was 4.24±3.25(mean±SD) with a range of 0.42 to 18.46. Diagnostic accuracy of UNa/K ratio in the detection of severity and mortality was estimated by the receiver operating characteristic (ROC) curve. The AUC of UNa/K ratio was 0.608 and 0.640 for severity and mortality respectively. Sensitivity, specificity, PPV and NPV at cut-off 2.55 were 50.0, 66.0, 42.4 and 72.5; at 2.65 were 54.0, 66.0, 44.3, and 74.2; at 2.87 were 58.0, 62.0, 43.3, and 74.7; at 3.21 were 58.0, 58.0, 40.8, and 73.4 respectively for severity score(MELD). Patients with UNa+/K+ less than 2.87 or equal, had a significantly higher MELD score category (p= 0.02). At 3 months follow-up, 24.7% mortality was observed. Sensitivity, specificity, PPV and NPV at cut-off 1.62 were 51.4, 85.8, 54.3 and 84.3; at 1.79 were 54.1, 79.7, 46.5 and 84.1; at 1.83 were 59.5, 77.0, 45.8 and 85.3; at 2.87 were 58.0, 62.0, 43.3, and 74.7 respectively for mortality. The UNa/K ratio was statistically low among the patients who didn't survive (p<.05).

Conclusion: This study revealed that decreased UNa/K ratio was associated with the severity and mortality among decompensated cirrhosis of liver patients with ascites.

29

Frequency, Clinical Presentation, and Outcome of Acute-on-Chronic Liver Failure among Decompensated Cirrhosis of Liver Patients in a Tertiary Care Hospital in Dhaka

Azam M[1], Mustafa S[2]
[1]BIRDEM Academy, Dhaka, Bangladesh, [2]Sheikh Russel National Gastroliver Institute & Hospital, Dhaka, Bangladesh

Background: Acute-on-chronic liver failure (ACLF) is characterised by the presence of organ failure in patients with decompensated cirrhosis and is associated with high short-term mortality. EASL-CLIF Consortium Acute-on-Chronic Liver Failure in Cirrhosis (CANONIC) study are most comprehensive and widely accepted till date. Objective: To evaluate frequency, clinical presentation, and outcome of acute-on-chronic liver failure among decompensated cirrhosis of liver patients.

Methods: This prospective observational study was carried out at the department of GHPD,

BIRDEM Dhaka, Bangladesh. A total of 175 patients with decompensated cirrhosis of liver were screened. Diagnosis of decompensated cirrhosis was based on clinical, biochemical, radiological and endoscopic findings. Laboratory data within 24 hours were collected. Patients' prognosis and survivability were observed by follow up phone calls at 30 days.

Results: Out of 153 patients, 49 patients (32%) had ACLF: grade 1 ACLF in 26 (53.1%), grade 2 in 18 (36.7%), and grade 3 in 5 10.2%) patients. Patients' age was 59.54±11.55 years, 55.6% being male with no significant difference between ACLF and no ACLF groups. Frequency of HBV and HCV infection among ACLF group was 24.5% and 8.2%, respectively. But most patients in both groups (63.3% in ACLF and 51.9% in no ACLF group) had NAFLD. Bacterial infection, GI bleeding, HEV infection, reactivation of HBV were the precipitating events in 81.6% of patients with ACLF, with bacterial infection being the most common trigger (63.3%). Ascites (76.9%), hepatic encephalopathy (46.2%) and GI bleeding (11.5%) were most commonly observed clinical features in ACLF. Overall, 44.9% ACLF patients died within 30 days of admission. Older age (Odds Ratio [OR] 1.01), male sex (OR 3.33), hepatic encephalopathy (OR 2.31), GI bleeding (OR 12.13), presence of any precipitating factor (OR 3.50) and higher CTP score (OR 1.09) were associated with increased risk of death in ACLF.

Conclusion: It revealed that 1 in 3 patients had ACLF and nearly half of them would die in 30 days. Bacterial infection and GI bleeding were the most common precipitating events. Early identification and intervention with multidisciplinary approach and referral to transplant centers are likely to improve survival outcomes.

30

Comparison of the Proteome of Huh-7 Cells Transfected With Replication-Competent Different (Sub)Genotypes of Hepatitis B Virus Prevailing in and Outside Sub-Saharan Africa

Padarath K[1], Deroubaix A[1,2], Kramvis A[1]
[1]Hepatitis Virus Diversity Unit, Department of Internal Medicine, School of Clinical Medicine, Faculty of Health Science, University of Witwatersrand, Johannesburg , South Africa, [2]Life Sciences Imaging Facility, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa

Hepatitis B Virus (HBV) is classified into nine genetically distinct genotypes, A to I, and at least 35 subgenotypes. In sub-Saharan Africa (sSA), (sub)genotypes A1, D3, and E prevail. Genetic variations between (sub)genotypes can contribute to differences in HBV pathogenesis and progression to hepatocellular carcinoma (HCC). Individuals infected with subgenotype A1 have a 4.5-fold increased risk of HCC compared to those infected with other (sub)genotypes. The effect of (sub)genotypes on protein expression and host signalling has not been studied.

We used mass spectrometry to analyse the proteome of Huh-7 cells transfected with replication-competent clones of (sub)genotypes prevailing in sSA compared to A2, prevailing outside Africa. Proteomic analysis, 5 days post transfection, revealed significantly differentially expressed proteins between sSA (sub)genotypes compared to A2 ($p<0.05$). These differentially expressed proteins were classified into the top 10 pathways shared between (sub)genotypes A1, A2, D3 and E (apoptosis, angiogenesis, ubiquitin-proteasome, T-cell activation, inflammation, Wnt, p53, RAS, integrin signalling pathway and CCKR signalling). Amongst the top 10 pathways, proteins involved in inflammation, T-cell activation and apoptosis were significantly decreased in sSA (sub)genotypes compared to A2. Furthermore, RAS proteins were significantly upregulated (1.5-fold increase) in A1 compared to other (sub)genotypes. The downregulation of pro-inflammatory cytokines and apoptotic pathways helps promote the survival of HBV-infected

hepatocytes, possibly leading to persistence in sSA (sub)genotypes compared to A2. Two of the main cellular pathways involving RAS proteins are the mitogen-activated protein kinases (MAPK) and phosphoinositide-3 kinase (PI3K). Both MAPK and PI3K signalling pathways regulate cell growth, motility, survival, and metabolism. The upregulated RAS proteins: guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1 (GNB1), Rho-related GTP-binding protein (RhoC), Ras-Associated Protein 1 (Rap1) have been documented as oncoproteins in various cancers and could contribute to the increased hepatocarcinogenic potential of A1. Ongoing future work will involve confirming the differentially expressed proteins in vitro.

31

Retrospective Investigation of Risk Factors, Clinical Characteristics, and Treatment Outcomes for Hepatocellular Carcinoma in Rwanda

Uwimana A[1], Kubwayo P[2], Dukundane D[3], Nkeshimana M[4], Naveed A[1], Gupta N[6], Seruyange E[5], Bosland M[1], Rubagumya F[5]
[1]University of Illinois at Chicago College of Medicine (UIC), Chicago, United States, [2]University of Rwanda, College of medicine and health science, Kigali, Rwanda, [3]King Faisal Hospital (KFH), Kigali, Rwanda , [4]University Teaching Hospital of Kigali (CHUK), Kigali, Rwanda, [5]Rwanda Military Hospital (RMH) , Kigali, Rwanda, [6]Division of Global Health and Social Medicine, Harvard Medical School, Boston , USA

Hepatocellular carcinoma (HCC) is a growing crisis worldwide with limited treatment options, poor prognosis, and survival rate of less than 5 years. In sub-Saharan Africa, over 46,000 new cases are reported every year. HCC is commonly associated with alcohol consumption, viral hepatitis, especially Hepatitis B (HBV) and C (HCV), aflatoxin exposure, and obesity, type II diabetes, and HIV infection. In Rwanda, there is a lack of research on the risk factors leading to HCC as well as treatment outcomes of HCC. The purpose of this research project was to determine the prevalence of HCC risk factors and treatment outcomes in patients aged 18 years of age and above diagnosed with HCC from 2016 to 2021 in Rwanda. Data were abstracted from patients' paper charts and electronic medical records and recorded in REDCap and analyzed in STATA.

Overall, 219 individuals were included in the study. 32.9% were female, the median age at diagnosis was 32 (26–54) years, and 48.4% came from the capital city of Kigali. Only 13.3% of patients had histo-pathological confirmation of HCC, while 86.7 % were diagnosed clinically with radiological images, alpha-fetoprotein, and other clinical findings. The most common risk factors were HCV and HBV infection with a prevalence of 27.4% and 20.1%, respectively. HIV infection and diabetes mellitus were present in 6.9% and 6.2% of patients, respectively. More than 80% of patients had had clinical or ultrasound evidence of cirrhosis, including ascites or hepatic encephalopathy and only 8.9% of patients received Sorafenib, and no patient had surgical resection, ablation, or liver transplant. Among all patient diagnosed with HCC, 36% died within 3 months of diagnosis.

In this study, the majority of HCC cases occurred at a young age with a high rate of mortality. HBV and HCV were the most frequent risk factors, and the majority of patients had clinical characteristics of decompensated liver failure. There is a clear lack of diagnostic tools, most glaringly pathologic diagnosis, and an extreme lack of treatment options. Increased awareness for HBV and HCV prevention and screening as well as further studies on etiology of HCC cases and management are needed.

32

Non-invasive Predictors of Esophageal Varices in Patients With Cirrhosis: A Cross Sectional Study in Ethiopia

Mekonnen H[1], Lelisa G[1], Chanie Y[1]
[1]St. Paul's Hospital MMC, Addis Ababa, Ethiopia

Background: Esophageal varices (EV) with gastrointestinal (GI) bleeding, is one of the major consequences of portal hypertension. It is also a leading cause of death in patients with end-stage liver disease. The only reliable diagnostic evaluation for confirming esophageal varices is an upper Gastrointestinal endoscopy (EGD). But, EGD is an invasive test, it requires an expensive machine, an experienced trained interventional

endoscopist, and infrastructures. Such kind of set-ups are not available in many Low-middle income countries. Hence, a non-invasive predictor for the presence of esophageal varices is very important in areas where endoscopy services are not promptly available.

Objective: The aim of the study was to determine the validity of a platelet count (PLTc), and platelet count/spleen diameter ratio to predict the presence or absence of esophageal varices (EV) in patients with cirrhosis of any cause with no history of prior upper GI bleeding.

Methods: The study analyzed data from patients with cirrhosis, from February 2017 to December 2018 at St. Paul's Hospital Millennium Medical college (SPHMMC). An Observational, prospective cross sectional study design was employed in individuals with no prior history of GI bleeding. Relevant clinical parameters, laboratory evaluation and ultrasound diameter of the spleen were assessed. Laboratory parameters include hemoglobin level, platelet count, INR, serum bilirubin, and albumin. SPSS version 23 used for data analysis; Univariate and multivariate analysis were done for predictors of EV, a P-value <0.05 was considered statistically significant.

Results: Sixty-two (62) patients with cirrhosis were included; 44(71%) were male and the median age was 37 years. Platelet count less than 150,000 is a good predictor for the presence of esophageal varix, with sensitivity and specificity of 86% and 42% (OR=4.4,95% CI of 1.08-17.76, P=0.029) respectively. Platelet count to Spleen Diameter ratio cut-off at 833 has a better sensitivity and specificity of 68% and 83% (OR=10.63 (CI 2.08-54.25; P=0.001)) respectively, for predicting presence of esophageal varices.

Conclusions: We recommend a platelet count to spleen diameter ratio (n/mm3)/mm) cut-off 833 as a potential non-invasive predictor of esophageal varices.

33

In-Hospital Mortality and Factors Associated Among Patients With Liver Cirrhosis Admitted at Muhimbili National Hospital- Dar-Es-Salaam, Tanzania

Janoowalla A[1]
[1]*Muhimbili University Of Health And Allied Sciences, Dar-es-salaam, Tanzania, United Republic of*

Background: Liver cirrhosis is a significant public health matter in Tanzania. Most of these patients present with advanced and irreversible disease. The world-wide In-hospital mortality amongst patients with liver cirrhosis ranges from 8.7% to as high as 41%. Mortality risk increases rapidly when these patients experience signs and symptoms of decompensation which include ascites, hepatic encephalopathy, upper gastrointestinal bleeding, and spontaneous bacterial peritonitis among others.

Objective: To determine the In-hospital mortality and factors associated among patients with Liver Cirrhosis admitted at Muhimbili National Hospital.

Methods: This was a cross-sectional study which was carried out at Muhimbili National Hospital involving 179 consenting patients with a diagnosis of Liver Cirrhosis admitted at the Internal Medicine department. Patient information was collected using a structured questionnaire. Diagnostic biochemical and hematological tests were performed for all patients. Analysis was done using Modified Poisson regression to determine association between In-hospital mortality and baseline variables. Statistical significance was considered when the p-value was less than 0.05. Data analysis was done using SPSS version 23.

Results: A total of 179 patients with liver cirrhosis were included. Males accounted for the majority (67.6%). The mean (±SD) age of the study population was 47.4 (±15) years. The most common complication was ascites (88.8%) followed by jaundice (46.4%) and esophageal varices (36.3%). In-hospital mortality occurred in 35 patients (19.6%). Factors independently associated with mortality were Hepatic

encephalopathy aRR(95%CI) =1.693(1.11-2.58), elevated WBC aRR(95%CI)=1.805(1.06-3.06), Hyponatremia aRR(95%CI)=1.860(1.09-3.15) and Child Pugh C aRR(95%CI)=8.183(2.80-23.88).

Conclusions and Recommendations: The identification of Hepatic Encephalopathy, hyponatremia, elevated WBC, and CTP C as factors associated with mortality provides valuable insight into the risk factors for poor outcomes in liver cirrhosis patients. Therefore, healthcare providers should prioritize monitoring and addressing these factors in the management of these patients.

34

Clinical Profile of Patients With Chronic Liver Disease and the Predictors of Hospital Mortality at Muhimbili National Hospital

Mwanga A[1], EXAUD MASSAWE G[1]
[1]MUHIMBILI NATIONAL HOSPITAL, ILALA, Tanzania, United Republic of

Background: Chronic liver disease (CLD) is the term used to describe disordered liver function for 6 or more months. It results from progressive destruction and regeneration of liver parenchyma and encompasses a variety of liver pathologies leading to cirrhosis and hepatocellular carcinoma. Commonest cause of CLD is viral hepatitis (HBV AND HCV) and alcohol misuse. It develops gradually with imprecise clinical presentation and as a result lead to late diagnosis. Therefore, initial presentation with clinically decompensated liver disease is common.

Objective: To describe patient characteristics and predictors of hospital mortality.

Methods: A cross-sectional hospital-based study conducted for a period of 6 months starting from November 2020 to April 2021, the study population comprised of consenting adults with clinical and radiological evidence of chronic liver disease. Semi-structured interviews were designed to obtain information, association was tested using chi-square with a P value of 0.05 accepted for significance.

Results: There were 123 patients with chronic liver disease in this study. Mean age of respondents was 48± 14 years with a male to female ratio of 2.6:1. Majority of patients had HBV infection, 56% had cirrhosis, HCC 29%, and cirrhosis with HCC 15%. Subjects had a mean MELD score of 15.6±8.7 and most patients were in Child Turcotte Pugh score class B and C. Having MELD between 9-19 and higher or Child Turcotte Pugh class B and C was associated with increased in-hospital mortality.

Conclusion: Majority of subjects had a HBV infection, as per clinical profile most presented with decompensated liver function, from our results MELD and Child Pugh could predict mortality and patients that will benefit of liver transplant.

35

A Comprehensive Overview of In-Patients Treated for Hepatocellular Carcinoma at a Tertiary Care Facility in Tanzania

Kitua D[1]
[1]MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES (MUHAS), Ilala, Tanzania, United Republic of

Background: Hepatocellular carcinoma (HCC) is one of the commonest causes of cancer-related morbidity and mortality worldwide. However, only a limited number of studies on HCC have been conducted in Tanzania. We therefore conducted a cross-sectional study among in-patients treated for HCC in a tertiary referral hospital located in Dar es Salaam, Tanzania, in order to provide a concise description of the clinical characteristics and treatment options offered in the study setting.

Results: We identified 36 in-patients treated for HCC over a 6-month data collection period. Seventy-seven percent (n = 28) of the participants were males and about two-thirds (61.2%) were aged between 40 and 60 years. Majority (44.4% [n = 16]) of the patients had Child-Pugh class B and an Eastern Cooperative Oncology Group (ECOG) performance status of 2 (33.3% [n = 12]). Patients with tumors >6.5 cm and multinodular tumors (>3

nodules) accounted for 69.4% (n = 25) and 55.6% (n = 20), respectively. Portal vascular invasion and extrahepatic metastasis were respectively present in 27.8% (n = 10) and 25% (n = 9) of the patients. Of the study participants, only two had early-stage disease as per the Barcelona Clinic Liver Cancer (BCLC) staging system, corresponding to the observed tumor resection rate of 5.6%. The most frequently reported inoperable factor among the study participants was an ECOG performance status > 0 (n = 30 [83.3%]).

Conclusion: Findings thus reveal a high proportion of late-stage diseases among participants that could have resulted in the observed low tumor resection rate. Initiatives to facilitate identification of the disease at an early stage are therefore paramount in optimizing care.

36

Clinical Characteristic, Management of Patients and Factors Associated With Portal Hypertension at Tertiary Level Hospital, Tanzania

ITULE LUGWAJA P[1], Mwanga A[2]
[1]SEKOU TOURE REGIONAL REFERRAL HOSPITAL MWANZA, NYAMAGANA, TANZANIA, [2]MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES (MUHAS), ILALA, TANZANIA

Background: Portal hypertensions occurs with elevation of hepatic venous pressure gradient greater than 5mmhg, significantly the clinical is present when the gradient exceeded 10 mmhg while the risk of it common complication of variceal bleeding occurs with an increase of greater than 12mmhg.Sub-Saharan African is the most affected part of the world with a noncirrhotic portal hypertension cause being schistosomiasis with Tanzania being the second country after Nigeria, with majority of its patients presenting late. Aim of this study was to understand Clinical characteristics, etiology, treatment offered at our setting, and factors associated with portal hypertension at tertiary level hospital, Tanzania.

Methods: A prospective cross-sectional observational single hospital-based study was conducted at MNH, from May 2021 to April 2022.A minimum of 152 subjects were required at an error of less than 5% and study power 80% at a 95% confidence interval. Structured questionnaire was used to collect data. Ethical clearance was obtained from the MUHAS/MNH IRB.

Results: A total of 154 eligible participants consented and participated in this study. The mean age of participants was 42 ± 15.8 years (range 2 - 87). Majority of the study participants were males 64.9% with male to female (M: F) ratio 1.8:1. Vomiting blood was the common symptom among the study participants 51.3%. Schistosomiasis 53.9% and viral infection 26.6% were the common etiologies followed by alcohol abuse 7.8%. Most were medically treated 89.61 % followed by radiological treatment to 8.44% while only 1.95% of patients received surgical treatment. There was a significant association between grade of esophageal varices and bleeding consequences (p value < 0.01).

Conclusion: Majority of patients were medical treated while patients who requires surgical care are unable to assess it. Managing patients with portal hypertension is challenging due to the complexity of the disease and multiple organ involvement. For this reason, the management is multidisciplinary with an interprofessional team of healthcare professionals are required, we recommend the establishment of transplant services program to counteract the unmet need after more retrospective research toward policy establishment.

37

Proteomic Analyses of Huh-7 Cells Transfected With Replication-Competent Clones of Subgenotype A1, With and Without the G1862T Mutation

Padarath K[1], Deroubaix A[1,2], Kramvis A[1]
[1]Hepatitis Virus Diversity Research Unit ,Department of Internal Medicine, School of Clinical Medicine, Faculty of Health Science, University of Witwatersrand, Johannesburg , South Africa, [2]Life Sciences Imaging Facility, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa

HBeAg is a non-structural, secreted protein of hepatitis B virus (HBV). Its precursor, P25 has a signal peptide, directing P25 to the endoplasmic reticulum (ER). Here, it is post-translationally modified by signal peptide cleavage. The G1862T

(valine to phenylalanine) mutation, frequent in subgenotype A1 HBV isolated from hepatocellular carcinoma patients, interferes with signal peptide cleavage. This results in the accumulation of P25 in the endoplasmic reticulum and Golgi intracellular compartment and the activation of unfolded protein response pathways. The objective of our study was to determine if this accumulation can affect other host signalling pathways. Mass spectrometry was used to analyse the proteome of Huh-7 cells transfected with either wild-type or G1862T subgenotype A1 replication-competent clones. Proteomic analysis at 5 days post-transfection revealed significantly differentially expressed proteins between G1862T transfected cells compared to wildtype ($p<0.05$). These differentially expressed proteins were further classified into pathways. Immune system pathways (interleukin signalling, inflammation mediated by chemokine and cytokine signalling, T cell activation, Toll receptor signalling) were significantly increased by 1.5-fold in cells transfected with G1862T compared to wildtype. Moreover, proteins involved in DNA replication (replication protein A and DNA primase (PRIM2)) were significantly upregulated (2.3-fold increase) in mutant compared to wildtype transfected cells. As HBeAg acts a tolerogen and immunogen and uncontrolled cell proliferation is a hallmark of cancer, this mutation may have important implications in persistence and in contributing to the high hepatocarcinogenic potential of subgenotype A1. Ongoing future work will confirm the differentially expressed pathways in vitro.

38

Upper Gastrointestinal Endoscopy in Patients With Liver Cirrhosis: Experience From a Tertiary Centre in Lagos, Nigeria

Odeghe E[1], Uchechukwu J[1], Onodingene O[1], Nnadi A[1], Tamunodukobipi S[1], Oyeleke G[1], Adeniyi O[1]
[1]*Lagos University Teaching Hospital, Lagos, Nigeria*

Background: International guidelines recommend that patients with liver cirrhosis undergo a screening upper gastrointestinal endoscopy (UGIE) at diagnosis for the identification and treatment of varices. In addition, UGIE is recommended in patients with upper gastrointestinal bleeding (UGIB) for diagnosis and treatment of the bleeding lesions.

Aims: To describe the indications for UGIE and the spectrum of endoscopic findings in patients with liver cirrhosis in a tertiary centre in Lagos, Nigeria.

Methods: This was a retrospective study of the endoscopy records of all adults with cirrhosis who underwent UGIE at a tertiary hospital in Lagos, Nigeria between September 2016 and March 2023. Only the first procedure for each patient was included. The following data were extracted from the endoscopy records: sociodemographic data, aetiology of cirrhosis, indication for UGIE and UGIE findings. Ethical approval was obtained prior to the study. Basic descriptive statistics were performed using R statistical software version 4.1.2.

Results: Seventy-seven patients were studied (males 59 [76.6%], mean age 46.1 ± 11.4 years). The indications for UGIE were UGIB (55, 71.4%), variceal screening following a diagnosis of cirrhosis (19, 24.7%) and dyspepsia (3, 3.9%). The causes of the underlying cirrhosis were chronic hepatitis B infection (28, 36.4%), alcohol (15, 19.5%), chronic hepatitis C infection (4, 5.2%) and non-alcoholic fatty liver disease (1, 1.3%). In 29 (37.7%) the cause of the cirrhosis was not known. Seventy-one (92.2%) patients had endoscopic features of portal hypertension (66 [93%] with gastro-oesophageal varices and 5 [7%] with portal hypertensive gastropathy only), 25 (32.5%) had peptic ulcers and UGIE was normal in 3 (3.9%). These findings were not exclusive.

Conclusion: According to our study, UGIB is the commonest reason for patients with cirrhosis to undergo UGIE in our centre. The proportion of UGIE performed for variceal screening is low. We recommend increased physician awareness on the importance of endoscopic variceal screening in their patients with cirrhosis.

39

Risk Factors for Post Discharge Readmission and Mortality in Patients Hospitalized for Decompensated Chronic Liver Disease

BELIMI H[1], DEBZI N[1], OULED CHEIKH I[1], KERBOUCHE R[1], GUESSAB N[1], AFREDJ N[1], DAMERDJI H[2]
[1]CHU MUSTAPHA PACHA, Algiers, Algeria, [2]2.Consultant biostatistician, SAN FRANCISCO, USA

Background: Decompensated cirrhosis(DC)is associated with poor outcome and mortality. Many factors can influence the disease evolution patterns. The aim is to identify predictors of readmission and mortality within 90-days post hospital discharge in DC patients.

Methods: Monocentric prospective study involving non-elective hospitalized patients for DC, aged 18 years or more. We excluded patients with acute liver failure, life expectancy less than 48hours, hepatocellular carcinoma, COVID-19infection, recent myocardial infarction(less than 6months)and stroke with residual defects. Data were collected at admission, during hospitalization, at discharge and during follow-up:90-days from hospital discharge.
Statistical analysis: Multiple logistic regression model was used to identify factors associated with90-days post discharge readmission and mortality. Random Forest method was employed using«The python library scikit-learn».

Results: From4/1/2021 to9/30/2021, 50patients were enrolled, mean age 55.92[22-81years]; 46%male(n=23), dysimmune liver disease was the most common etiology at28%(n=14), followed by cryptogenetic cirrhosis at24%(n=12), non-alcoholic-steato-hepatitis at20%(n=10) and alcoholic cirrhosis at14%(n=7). 28%had associated portal vein thrombosis(n=14), 46%were diabetic(n=23) and 34%had high blood pressure(HBP)(n=17). 34%was hospitalized in the last six months(n=17). 20%had refractory ascites(n=10).
46%(n=23)had an infection at admission, 35%of witch were spontaneous bacterial peritonitis(SBP)(n=8). Admissions were for gastrointestinal bleeding in 34%(n=17), hepatic encephalopathy in32%(n=16), acute kidney injury in30%(n=15), electrolyte abnormalities in14%(n=7) and other complications in 8%(n=4). Mean admission CTP was 9(5-15) and MELD-Na23(7-42). 62%were admitted to our continuous care unit(n=31). Median hospital stay was 6days(1-15). Mean Karnofsky-scale at discharge was 59%(0-100%). 06patients died during hospitalization(12%)and 01patient lost to follow-up. 44%of the remaining patients were readmitted 1to4 times(n=20)and 30%(n=13)died within90-days post discharge, only 01patient was transplanted but died within90-days. Our global mortality rate is38.8%.
Independent predictors of90-day-mortality (AUROC:0.75)were: previous hospitalization in the last six months with a relative risk (RR)of12.7, HBP(RR=9), AKI(RR=5.9), SBP prophylaxis(RR=5.7), ascites(RR=5.6), diabetes(RR=4.9), refractory ascites(RR=4.8), history of hydrothorax(RR=1.8) and MELD-Na ≥18(RR=1.7).The logistic model was less performant in predicting readmission within 90-days post discharge(AUROC:0.55).No strong association between hospital readmission and death was found.

Conclusion: Previous hospitalization in the last six months, ascites, comorbidities were the most important risk factors of 90-day-mortality post discharge. This study showed the difficulties of management of DC in emerging countries, particularly in access to liver transplantation.

40

Estimating the Residual Risk of Hepatitis B Mother-To-Child Transmission in the Gambia, 30 Years After Hbv Vaccine Implementation

Ndow G[1], Bangura R[1], Vo Quang E[1], Touray F[1], Jatta A[1], Barry J[1], Bah S[1], Nyassi F[1], Bola-Lawal Q[1], Touray A[1], Drammeh S[1], Cham H[1], Cloherty G[2], Lo G[3], Toure-Kane C[3], Bojang L[1,4], Shimakawa Y[5], D'Alessandro U[4], Lemoine M[6]
[1]MRC Unit The Gambia at LSHTM, Hepatitis Group, Disease Control and Elimination Theme, Fajara, Gambia, [2]Abbott Labs, , United States , [3]IRESSEF, Dakar, Senegal, [4]MRC Unit The Gambia at LSHTM, Fajara, The Gambia, [5]Institut Pasteur, Paris, France, [6]Imperial College London, Metabolism, Digestion and Reproduction, London, United Kingdom

Background: Mother-to-child transmission (MTCT) of hepatitis B virus (HBV) remains a neglected public health issue in Africa. In this study, we aimed to assess the rate of HBV MTCT among babies born to HBsAg positive women in The Gambia.

Method: All pregnant women attending major antenatal clinics were invited for HBsAg testing using a rapid diagnostic test. HBV DNA viral load and HBeAg serology were assessed in HBsAg positive mothers. The rate of HBV MTCT was defined as the proportion of babies born to HBV-infected women who tested positive for HBsAg at age 6 months.

Results: Between 2020 and 2022, 9,692 pregnant women accepted HBsAg screening. After excluding 11 women with missing HBsAg results, 435/9,681 (4.5%) women were HBsAg positive.

20 of 304 women (6.6%) had HBV DNA >200,000IU/mL and 14/218 (6.4%) were HBeAg positive. Women with HBV DNA viral load >200,000IU/mL were younger (median age 25 years (IQR 20-27) vs 30 years (IQR 25-35), p <0.001) and more likely to be HBeAg positive (83.3% vs 1.1%, p <0.001).

Of the 435 HBsAg-positive pregnant women, 10 had stillbirths, 3 had abortion, 1 died and 78 were lost to follow up. 343 women had live births with total of 351 babies, of whom 189 were successfully reassessed at age 6-9 months. Only 67/179 (37.4%) HBV exposed babies received a timely HepB-BD vaccine. Among babies with delayed HepB-BD vaccine, 33 (18.4%), 51 (28.5%), 18 (10.1%) and 10 (5.6%) received first hepatitis B vaccine with 2-7 days, 8-28 days, 29-60 days and > 60 days respectively.

Among 189 exposed babies, 4 were HBsAg positive giving a rate of HBV MTCT at 2.1% (CI 0.8 – 5.3). Among 7 babies born to women with HBV DNA >200,000 IU/mL, only one received timely HepB-BD and the rate of HBV MTCT was 57.1% (4/7, CI 20.2 – 89.2). All 138 babies born to women with viral load <200,000 IU/mL tested HBsAg negative

Conclusion: There is significant residual risk of HBV MTCT driven by highly viremic women. Our study suggests an urgent need to implement peripartum HBV antiviral prophylaxis to achieve HBV elimination by 2030.

41

Assessing Turn-Around Times for HBV Diagnosis, Treatment Initiation and Real-World Challenges of Using Genexpert Systems in Low-Resourced Settings

Drammeh S[1], Ceesay A[1], Bola-Lawal Q[1], B Touray A[1], Bah S[1], Touray F[1], Barry J[1], SIma A[1], Bangura R[1], Vo Quang E[1], Bojang L[1], Lemoine M[2], Ndow G[1,2]
[1]Medical Research Council, Gambia @ London School Of Hygiene And Tropical Medicine, Banjul, Gambia, [2]Division of Digestive diseases, Department of Metabolism, Digestion and Reproduction, Imperial College London, London, United Kingdom

Background: Point-of-care molecular diagnosis could increase uptake of hepatitis B virus (HBV) DNA testing and treatment in resource-limited settings. We assessed the real-world challenges of using GeneXpert for HBV DNA viral load testing in The Gambia, and its impact on turn-around time (TAT) to treatment initiation.

Methods: We mapped all GeneXpert systems across The Gambia and administered questionnaires to assess the real-world challenges of using GeneXpert for molecular testing. We then tested HBV DNA using conventional qPCR and GeneXpert in plasma and dried blood spots (DBS) samples collected from HBV patients enrolled in the PROLIFICA program in The Gambia. Regression analysis was used to assess correlation between paired plasma and DBS samples and TAT from clinical assessment to HBV DNA results and/or treatment initiation was compared between qPCR and GeneXpert.

Results: Twenty GeneXpert machines, including 12 installed during or after the COVID-19 pandemic, are available across 17 health-facilities in The Gambia. Only 2 machines are used for HBV DNA testing. Delays (median 12 weeks) and cost of cartridge shipment, unstable electricity, lack of air-conditioned room and cartridges lost due to error and/or invalid results (1-5 per 50 tests) were common challenges.
Of 56 paired samples tested for HBV, a good correlation was observed between plasma and DBS viral load log IU/mL (r=0.88, p=0.02), with a mean bias of -1.4 log IU/mL.

The median TAT from sample collection to HBV DNA results was 138 minutes (IQR 113–179) for GeneXpert and 83 days for qPCR. Furthermore, median TAT from HBV DNA results to treatment initiation was 6 for GeneXpert and 18 days for conventional qPCR. Among 138 HBV patients assessed in the PROLIFICA clinic, including 53 newly diagnosed, 135 (98%) had reflex HBV DNA viral load testing on the same day as clinical assessment.

Conclusion: GeneXpert improves TAT for HBV DNA results and treatment initiation. Correlation between plasma and DBS is good, however, viral load measurements are lower for DBS. Operational challenges using GeneXpert systems in the real-world are significant and require considerations for more efficient use.

42

Hepatitis B in Africa Collaborative Network (HEPSANET): Multi-Regional Partnership to Advance Science and Public Health Using Local Data

Vinikoor M[1], Riches N[2], Guingane A[3], Johannessen A[4], Lemoine M[5], Matthews P[6], Okeke E[7], Shimakawa Y[8], Sombie R[9], Stockdale A[10], Wandeler G[11], Andersson M[12], Davwar P[7], Desalegn H[13], Duguru M[7], Fall F[14], Maponga T[15], Nyam Paul D[7], Seydi M[16], Sinkala E[19], Taljaard J[17], Sonderup M[18], Spearman C[18]

[1]Centre For Infectious Disease Research In Zambia, Lusaka, Zambia, [2]Malawi Epidemiology and Intervention Research Unit, Lilongwe, Malawi, [3]Hepato-Gastroenterology Department, Bogodogo University Hospital Center, Ouagadougou, Burkina Faso, [4]Institute of Clinical Medicine, University of Oslo, Oslo, Norway, [5]Department of Metabolism, Digestion and Reproduction, Imperial College London, London, United Kingdom, [6]The Francis Crick Institute, University College London, London, United Kingdom, [7]Faculty of Medical Sciences, University of Jos, Jos, Nigeria, [8]Epidemiology of Emerging Diseases Unit, Pastor Institute, Paris, France, [9]Département d'Hépato-gastroentérologie, Yalgado Ouédraogo University Hospital Center, Ouagadougou, Burkina Faso, [10]Department of Clinical Infection, Microbiology and Immunology, Institute of Infection, Veterinary and Ecological Sciences, University of Liverpool, Liverpool, United Kingdom, [11]Institute of Social and Preventive Medicine, University of Bern, Bern, Switzerland, [12]Division of Medical Virology, Stellenbosch University Faculty of Medicine and Health Sciences, Cape Town, South Africa, [13]Medical Department, St. Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia, [14]Department of Hepatology and Gastroenterology, Dakar Main Hospital, Dakar, Senegal, [15]Division of Medical Virology, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town, South Africa, [16]Department of Infectious and Tropical Diseases, Regional Center for Research and Training, Fann National University Hospital Center, Dakar, Senegal, [17]Division of Infectious Diseases, Department of Medicine, Tygerberg Hospital and Stellenbosch University, Cape Town, South Africa, [18]Division of Hepatology, Department of Medicine, Faculty of Health Sciences, University of Cape Town, Cape Town, South Africa, [19]University of Zambia, Lusaka, Zambia

Background: To close knowledge gaps around hepatitis B virus (HBV) infection in Africa, a multi-country research collaboration was formed. Here we summarize the initial outputs of the collaboration and direction for the future.

Methods: Following the 2020 COLDA, HEPSANET was established. Groups actively implementing longitudinal HBV cohorts in Africa undertook an initial data sharing exercise that focused on baseline, cross-sectional, pre-treatment data from people living with HBV (PLHBV). HEPSANET has now moved into harmonization of longitudinal data and continues to add cohorts. A codebook was created to standardize existing electronic. A REDCap database (French and English) was created for sites with paper data. All PLHBV who sought care at least once at the sites are eligible to be included. A final cohort outcome (active in follow-up, transferred, died, withdrew, or lost to follow-up [LTFU]) is assigned to each PLHBV. Phone and physical tracing are attempted for all LTFU. Sites using the REDCAP receive additional mentorship through a series of data quality meetings.

Results: Among 4,099 PLHBV analyzed (1065-East, 908-Southern, and 2126-West Africa), median age was 34 years, 39.3% were women, and 73.6% were diagnosed through asymptomatic testing (antenatal, blood bank, etc.). 90.5% were HBeAg-negative and 13.7% had cirrhosis (median liver stiffness >=9.5 kPa). Approximately half of non-cirrhotic PLHBV had an 'indeterminate' clinical phenotype (either elevated ALT with HBV DNA <2,000 IU/ml or vice versa). Further analysis of cross-sectional baseline data catalyzed creation of an alternative threshold for the AST-to-platelet ratio and development of a novel low-cost index to determine antiviral therapy eligibility. From January to March 2023, 12 cohorts have participated in longitudinal data trainings, and 6 cohorts have adopted the REDCAP platform.

Conclusions: HEPSANET is a new collaboration that is creating a multi-country, multi-cohort platform

for investigators to answer important questions around HBV infection in Africa and strengthen clinical and research capacity. Initial results demonstrate the potential to include representative PLHBV prior to and during antiviral therapy. Harmonized longitudinal data are expected to close important knowledge gaps and facilitate impactful analyses around the optimal timing to start treatment in African PLHBV.

43

Comparison of Ultrasound Shear Wave to Fibro Scan in Liver Fibrosis Assessment in Patients With Chronic Hepatitis B Virus

Dellil M[1]
[1]*St. Paul`s Hospital Millennium Medical College, Addis Ababa, Ethiopia*

Background: Measuring hepatic elasticity is one way for diagnosing and following up patients with increased risk of having Chronic Liver Disease. Two dimensional shear wave elastography and Transient elastography had proven to be efficient for the evaluation of liver fibrosis in small to moderate size clinical trials. There is limited use of fibro scan and in particular shear wave elastography in assessment of fibrosis in Ethiopia. This study tried to compare shear wave elastography with fibro scan in detection and staging of liver fibrosis.
Objective: To compare degree of liver fibrosis measured by Shear-wave Elastography to fibro scan in chronic hepatitis B virus patients.

Methods: A cross-sectional study design was used to collect data from 202 study participants using simple random sampling technique from patients on follow up at St. Paul hospital millennium medical college. The data was collected using LOGIQ E9/P7 GE ultrasound machine with a C1-5-RS curvilinear probe and Fibro Scan 402; Echosens, France . Completed data was entered to SPSS version 27 for cleaning and analysis. Descriptive statistics was used to summarize and Spearman correlation was used to measure strength and direction of relationship.

Result: A total of 184 study participants with complete data were included in the analysis. The median age of study participants was 40 years and the majority 86 (46.7%) were aged between 40-55 years. 105 (57.1%) of participants were women. Eighteen (9.8%) had clinically significant fibrosis, and Ten (5.4%) had cirrhosis by TE. While twenty-two (12%) of patients has clinically significant fibrosis and Ten (5.4%) has cirrhosis by Shear wave elastography.
There is strong positive relationship between measurement values done using fibro scan and shear wave elastography in terms of fibrosis detection and staging showed by spearman correlation for a clinically significant fibrosis with r=0.837 and detecting cirrhosis r=1 with significant p value <0.001.

Conclusion: This study shows fibro scan and shear wave elastography are comparable in detection, staging of fibrosis and diagnosing significant fibrosis (r=0.873) and cirrhosis (r=1) in Ethiopian CHB patients with 2 tailed p value <0.001. Recommendation: shear wave elastography can guide management decision where fibroscan is not available.

44

Renal Safety of Long-Term Tenofovir Disoproxil Fumarate Treatment in Patients With Chronic Hepatitis B

Woldemedihn G[2,3], Aberra H[4], Desalegn H[1,4], Berhe N[1,5], Bitew D[6], Rueegg C[3], Johannessen A[1,7]
[1]Vestfold Hospital, Tonsberg, Norway, [2]Hawassa University, Hawassa, Ethiopia, [3]Oslo University Hospital, Oslo, Norway, [4]St. Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia, [5]Addis Ababa University, Addis Ababa, Ethiopia, [6]Bahir Dar University , Bahir Dar, Ethiopia, [7]University of Oslo, Oslo, Norway

Background: Data on renal safety of Tenofovir disoproxil fumarate (TDF) treatment among individuals with chronic hepatitis B (CHB) are inconsistent. The current study aimed to assess the effect of long-term TDF treatment on renal outcomes in adult patients with CHB.

Methods: From a CHB cohort in Ethiopia we included 233 patients treated with TDF and 126 untreated controls. Levels of creatinine and creatinine clearance over time were described in patients with and without TDF treatment. Linear

mixed effects models with treatment*time interaction were used to investigate the effect of TDF on creatinine and creatinine clearance. In treated patients only, change in creatinine and creatinine clearance was estimated separately in the first year compared to subsequent years using linear mixed effects models.

Results: Median follow-up time was 51 months (interquartile range (IQR) 27-72) in the treated group (75% male, median age 33 years, IQR 26-40) and 69 months (IQR 66-72) in the untreated group (48% male, median age 33 years, IQR 27-41). We found no change in creatinine over time in TDF treated patients compared to a slight increase in creatinine in untreated patients (p-interaction=0.003). There was a decrease in creatinine clearance over time in both groups which was stronger in patients without TDF treatment (p-interaction=0.007). In TDF treated patients, changes in creatinine and creatinine clearance occurred mainly within the first 12 months after treatment initiation.

Conclusions: This study showed no evidence of long-term renal toxicity of TDF treatment in patients with CHB.

45

Treatment Eligibility and Performance of the WHO Treatment Criteria in Chronic Hepatitis B Patients in Tanzania

ADAM N[1]
[1]*MUHIMBILI NATIONAL HOSPITAL (MNH), ILALA, Tanzania, United Republic of*

In sub-Saharan Africa, the prevalence of chronic hepatitis B virus infection (CHB) and the accuracy of treatment eligibility criteria established by the World Health Organization (WHO) and the European Association for the Study of the Liver (EASL) remain poorly understood. This study aimed to determine the proportion of CHB patients eligible for antiviral therapy according to EASL criteria and evaluate the performance of WHO treatment criteria in Tanzania.

A prospective study was conducted, enrolling consecutive HBV-monoinfected patients without hepatocellular carcinoma or heavy alcohol consumption, referred to the main hepatitis clinic in Muhimbili National Hospital. Participants underwent various assessments, including HBV viral load measurement, hepatitis B e antigen (HBeAg) testing, liver enzyme analysis, and liver stiffness measurement (LSM) using Fibroscan. Significant liver fibrosis and cirrhosis were defined based on LSM values of ≥7.8 and ≥9.5 kPa, respectively.

Among the 257 patients recruited between 2020 and 2021, only 41 (16%) were aware of their infection, while 152 (59%) expressed fear regarding their diagnosis. The majority of participants were male (71%) with a median age of 35 years. Out of the 257 patients, 25% had liver fibrosis, including 14% with cirrhosis. The performance of the aspartate aminotransferase-to-platelet ratio index (APRI) in detecting significant liver fibrosis had a sensitivity of 0.28 and specificity of 0.83. None of the enrolled patients had an APRI >2, but 36 patients were suspected of having cirrhosis.
Based on complete data from 225 patients, 21.8% fulfilled the 2017 EASL treatment criteria, whereas only 3.6% met the WHO criteria. The WHO criteria demonstrated poor sensitivity (0.08) but excellent specificity (0.98) when compared to the EASL guidelines for identifying patients eligible for treatment.

In conclusion, this study highlights that approximately 20% of CHB patients in Tanzania require immediate antiviral therapy. Furthermore, the APRI showed limited performance in detecting fibrosis and cirrhosis, while the current WHO criteria exhibited unsatisfactory performance in identifying eligible patients for treatment. The findings emphasize the need for revised guidelines tailored to the sub-Saharan African context.

46

High Prevalence and Poor Linkage to Care of Transfusion-Transmitted Infections Among Blood Donors in Dar-Es-Salaam, Tanzania

RWEGASHA J[1]
[1]MUHIMBILI NATIONAL HOSPITAL (MNH), ILALA, Tanzania, United Republic of

Background: Blood transfusion is one of the most commonly relied upon therapies in sub-Saharan Africa. Existing safeguards recommended include systematic screening fortransfusion-transmitted infections and restricted voluntary nonremunerated blood donor selection. We report the transfusion transmittedinfection screening and notification practice at a large urban blood transfusion centre in Dar-es-Salaam,Tanzania.

Methods: Between October 2016 and March 2017 anonymized records of all donors registered at the blood transfusion unit were accessed to retrospectively note demographic information, donor status, first-time status, transfusion-transmitted infection result and notification. 6402 consecutive donors were screened for transfusion-transmitted infections; the majority were family/replacement blood donors (88.0%) and male (83.8%).

Results: Overall transfusion-transmitted infections prevalence was 8.4% (95% CI 7.8-9.1),with hepatitis B being the most prevalent infection (4.1% (95% CI 3.6-4.6)).Transfusion-transmitted infections were more common in family/replacement blood donors (9.0% (95% CI 8.3-9.8))as compared to voluntary non remunerated blood donor (4.1% (95% CI 2.8-5.7)).A minority of infected-donors were notified of a positive result (8.5% (95% CI 6.3-11.2)).

Conclusion: Although transfusion-transmitted infections are more prevalent among family/replacement blood donors, overall risk of transfusion-transmitted infections across all groups is considerable. In addition, existing efforts to notify donors of a positive transfusion-transmitted infection are poor. Future policies must focus on improving linkage to care for newly diagnosed patients with transfusion-transmitted infections.

47

APOBEC3G Polymorphisms and Implications for a Population With Chronic Hepatitis B Virus in Burkina Faso

Compaore T[1,2,3], Ouattara A[2,3,4], Sawadogo I[3], Traore L[2,3], Sagna T[1,2,3], DJIGMA F[2,3], OUEDRAOGO H[1,3], Simpore J[2,3]
[1]Institut de Recherche en Sciences de la Sante (IRSS/CNRST), Burkina Faso, Ouagadougou, Burkina Faso, [2]Biomolecular Research Center Pietro Annigoni (CERBA, Ouagadougou, Burkina Faso, [3]Laboratory of Molecular Biology and Molecular Genetics (LABIOGENE), , Ouagadougou, Burkina Faso, [4]Manga University Center, Koudougou, Burkina Faso

Background: Host factors such as APOPBEC3G were associated with hypermutation, which might interfere with HBV replication. The need to assess the impact of APOBEC3G polymorphisms on a population infected with hepatitis B is highlighted by a previous study. Thus, our study aimed to characterize two APOBEC3G single nucleotide polymorphisms and evaluate their association among people with chronic hepatitis B in Burkina Faso.

Methods: In this cross-sectional study, three hundred forty-five (345) individuals were recruited, including 106 HBsAg positive and 239 HBsAg negative. APOBEC3G polymorphisms rs6001417 and rs8177832 DNA genotyping were characterized by Taqman Allelic discrimination. Persons with chronic HBV, were declared as such after verifying their first HBV test positive results and confirming them by a multiplex real-time PCR screening for HIV, HBV, and HCV. Results: The minor allele G of rs600417 frequency was higher among participants with chronic hepatitis B. Furthermore, rs600417 was associated with the dominant model ($p<0.05$). Multivariate analysis for chronic hepatitis B risk factors shows that the risk of chronic hepatitis B for genotype CG and GG of rs6001417 seem to be significantly reduced and are, respectively, OR = 0.25 [95%CI 0.09 - 0.72, $p \leq 0.01$] and OR = 0.08 [95%CI 0.02 - 0.31, $p \leq 0.001$]. In the analysis, the GG genotype of rs8177832 seems to increase the risk of chronic hepatitis B by

more than six (6) times, and it was statistically significant OR = 6.41[95%CI 1.74 - 23.55, p ≤0.01].

Conclusion: This study shows that APOBEC3G may be a susceptibility gene for chronic hepatitis B virus carriage in our context. The locus could contribute to the mediation of host native resistance to HBV infection.

48

Increasing Awareness on Hepatitis B and Liver Cancer Through Community-Based Outreach in Rural Tanzania

Tappata M[1], Ford J[2], Kayandabila J[3], Seth S[3], Debes J[1]

[1]University Of Minnesota, Minneapolis, United States, [2]University of California San Francisco Medical Center, San Francisco , United States, [3]Arusha Lutheran Medical Center, Arusha, Tanzania

Background: Sub-saharan Africa has a high burden of hepatitis B virus (HBV) and hepatocellular carcinoma (HCC), particularly in rural areas, due to lack of identification of patients with HBV and lack of feasible surveillance programs for HCC. Here, we discuss combined HBV and HCC screening program in rural Tanzania to increase awareness, and for early detection.

Methods: We conducted mobile primary care clinics in rural villages in Tanzania in partnership with regional doctors and public health workers to screen for HBV and HCC between March 2021 and February 2023. Patients underwent informed consent and completed a study questionnaire on HBV. HBV testing was conducted with rapid point-of-care (POC) assay with fingerstick testing for HBsAg (hepatitis B surface antigen). HBsAg positive patients underwent POC ultrasound to screen for HCC, POC assay for hepatitis C (HCV) antibody, and were referred to HBV clinic for further management. Number of HBV diagnoses (primary outcome) and number of liver masses (secondary outcome) were recorded. Data were analyzed with descriptive statistics.

Results: A total of 501 patients were screened for HBV with rapid antigen testing in four villages, and of these, 63% (n=303) were female with median age of 40 (IQR 28-55). Only 6% (n=30) were vaccinated against HBV, 92% (n=453) were not vaccinated, and 2.4% (n=12) did not know vaccination status. 73% (n=310) of respondents did not know they should get vaccinated against HBV and 3.8% (n=16) reported vaccination was too expensive. 41% (n=182) knew how HBV was transmitted, and 4.1% (n=18) had a household member with HBV. There were 2.4% (n=11) positive for HBsAg, and over half were female (54.5% n=6) with median age of 36 years (IQR 34-43). All patients who tested positive were not vaccinated against HBV and were negative for HCV. 3 patients were tested for hepatitis B e antigen (HBeAg) with all three being positive. On ultrasound, one patient had a mass, and one ascites.

Conclusion: Our study demonstrates community-based HBV and HCC screening can be implemented sustainably in Africa with local partnerships. This model could be used in regions with high HBV endemicity and low rates of HCC screening.

49

Clinical Characteristics of People Living With Hepatitis B Viral Infection Seen at a Tertiary Hospital Under the Accelerating the Hepatitis Response in Zambia (ACCELERATE) Program

Sinkala E[1], Fwoloshi S[2], Kunda F[3], Chama E[3], Mulenga L[2], Chirwa R[3], Fwambo M[3], Kankasa C[3], Mulenga D[2], Vinikoor M[4]

[1]University of Zambia, School of Medicine, Lusaka, Zambia, [2]University Teaching Hospital, Adult HIV/AIDS Center of Excellence, Lusaka, Zambia, [3]University Teaching Hospital, Paediatric HIV/AIDS Center of Excellence, Lusaka, Zambia, [4]University Teaching Hospital, paediatric HIV/AIDS Center of Excellence, Lusaka, Zambia, [5]University Teaching Hospital, Adult HIV/AIDS Center of Excellence, Lusaka, Zambia, [6]University Teaching Hospital, Paediatric HIV/AIDS Center of Excellence, Lusaka, Zambia, [7]University Teaching Hospital, paediatrics HIV/AIDS Center of Excellence, Lusaka, Zambia, [8]University Teaching Hospital, paediatrics HIV/AIDS Center of Excellence, Lusaka, Zambia, [9]University Teaching Hospital, Adult HIV/AIDS Center of Excellence, Lusaka, Zambia, [10]University of Alabama at Birmigham, Alabama, USA

Background: Chronic hepatitis B viral (HBV) infection causes high morbidity and mortality worldwide. In resource constraint countries, lack of awareness, limited diagnostic tools, and insufficient clinical competency affect HBV evaluation. Zambia has high prevalence of HBV infection. There is need to understand the natural characteristics associated with HBV in Zambia. We now describe the clinical characteristics of patients with HBV under a new educational program called 'Accelerating the Hepatitis Response in Zambia' (ACCELERATE).

Methods: The University Teaching Hospital (UTH) HIV/AIDS program, supported by a Hepatitis Fund, implemented the ACCELERATE program beginning in May 2021. We set up a dedicated HBV clinic at UTH, Lusaka, Zambia where patient care could be administered, and clinicians be trained. Selected doctors trained as hepatitis trainers and conducted weekly clinics under the supervision of hepatitis experts. Patients were evaluated based on the Zambian guidelines. We now describe the characteristics of these patients.

Results: Since September 2021, we evaluated 554 patients with HBV, of whom 267(48%) were females and 287(52%) were males. The median age was 36 years (29, 45). The HBV testing circumstances that led to the diagnosis were wide with the majority 137(25%) testing positive while doing routine medicals. Others tested positive during antenatal care 98 (18%), blood donation 43 (7.8%), clinical suspicion 134 (24%), community screening program 13 (2.3%), index testing 30 (5.4%), integrated voluntary counselling and testing 8 (1.4%) and other (91,16%). Most patients were asymptomatic. A few presented with jaundice (54, 9.7%) and acute illness (18, 3.2%). Abdominal imaging revealed lesions in 11(1.9%) patients and cirrhosis in 22 (4.0%). The median liver stiffness was 6 kiloPascals. ALT was 24 U/L, IQR (16, 39) while AST was 29 U/L, IQR (22, 46). HBV DNA viral load was 300 IU/mL,IQR (9,5490). A small number 78 (19.9%) was eligible for treatment.

Conclusions: Most patients with HBV are young, asymptomatic, and per current guidelines, few needed immediate antiviral therapy. These elements (young age, lack of symptoms, lack of eligibility) are associated with high losses to follow-up in Zambia's HIV programs. HBV programs in Zambia will need robust strategies to keep people in care.

50

Patterns of Hepatitis B Virus Immune Escape and Pol/Rt Mutations Across Clinical Cohorts of Patients With Genotypes A, E and Occult Hepatitis B Infection in Nigeria: A Multi-Centre Study

Osasona O[1]
[1]*Redeemers University/ACEGID, Ede, Nigeria*

Hepatitis B virus (HBV) immune escape and Pol/RT mutations account for HBV immunoprophylactic, therapeutic, and diagnostic failure globally. Little is known about circulating HBV immune escape and Pol/RT mutants in Nigeria. This study focused on narrowing the knowledge gap of the pattern and prevalence of the HBV mutants across clinical cohorts of infected patients in southwestern Nigeria.

Ninety-five enrollees were purposively recruited across clinical cohorts of HBV-infected patients with HBsAg or anti-HBc positive serological outcome and occult HBV infection. Total DNA was extracted from patients' sera. HBV S and Pol gene-specific nested PCR amplification was carried out. The amplicons were further sequenced for serotypic, genotypic, phylogenetic, and mutational analysis. HBV S and Pol genes were amplified in 60 (63.2%) and 19 (20%) of HBV isolates, respectively. All the sixty HBV S gene and 14 of 19 Pol gene sequences were exploitable. The ayw4 serotype was predominant (95%) while ayw1 serotype was identified in 5% of isolates. Genotype E predominates in 95% of sequences, while genotype A, sub-genotype A3 was observed in 5%. Prevalence of HBV IEMs in the "a" determinant region was 29%. Commonest HBV IEM was S113T followed by G145A and D144E. The Pol/RT mutations rtV214A and rtI163V among others were identified in this study.

This study provided data on the occurrence of existing and new HBV IEMs and Pol gene mutations in Nigeria.

51

Outcomes of HBV Treatment in South Africa: How Commonly Does Viraemia Persist, and Can We Predict Why?

Said Mohammed K[1,2], Delphin M[1], Waddilove E[1], van Schalkwyk M[3], Hugo S[3], Gabriel S[4], Taljaard J[3], van Rensburg C[4], Preiser W[5,6], Goedhals D[7,8], Bester P[8], van Vuuren C[9], Barnes E[10,11], Matthews P[1,11,12,13], Maponga T[5,6]

[1]The Francis Crick Institute, 1 Midland Road, London, United Kingdom, [2]Division of Biosciences, Faculty of Life Sciences, University College London, London, United Kingdom, [3]Division of Infectious Diseases, Department of Internal Medicine, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town, South Africa, [4]Division of Gastroenterology, Department of Internal Medicine, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town, South Africa, [5]Division of Medical Virology, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town, South Africa, [6]National Health Laboratory Service Tygerberg Business Unit, Cape Town, South Africa, [7]PathCare Vermaak, Pretoria, South Africa, [8]Division of Virology, University of the Free State and National Health Laboratory Service, Bloemfontein, South Africa, [9]Division of Infectious Diseases, Department of Internal Medicine, Faculty of Health Sciences, University of the Free State, Bloemfontein, South Africa, [10]Department of Infectious Diseases and Microbiology, John Radcliffe Hospital, Headley Way, Oxford, United Kingdom, [11]Nuffield Department of Medicine, Medawar Building for Pathogen Research, University of Oxford, South Parks Road, Oxford, United Kingdom, [12]Department of Infectious Diseases, University College London Hospital, London, United Kingdom, [13]Division of Infection and Immunity, University College London, London, United Kingdom

Background: Nucleos(t)ide analogues (NAs) are used to suppress viraemia in people living with chronic hepatitis B virus (HBV) infection, with tenofovir disoproxil fumarate (TDF) being safe, accessible and effective for most patients. However, viraemia can be slow to suppress. We set out to determine the proportion of individuals in whom HBV viraemia is not suppressed after ≥ 12 months of NA treatment, and to identify factors associated with this phenotype in a South African cohort.

Methods: We reviewed clinical data from the 'OxSA-Hep' cohort, a cross-sectional cohort of 333 adults recruited from Cape Town and Bloemfontein, South Africa between 2019 and 2023. We employed non-parametric and parametric analyses in R to discern differences between those with successful virological suppression after ≥ 12 months of NA treatment, and those on treatment but 'Not Virologically Suppressed' (NVS; HBV DNA > 50 IU/ml after ≥ 12 months of treatment).

Results: 104/333 adults (31.2%) were on NA treatment and had detectable HBV DNA. Treatment duration and HBV DNA levels were available for 65/104 (62.5%). Among this population, median age was 42 (28 to 74 years), 27 (41.5%) were female, 25 (38.5%) had HBV mono-infection and 40 (61.5%) had HBV/HIV co-infection. 25/65 (38.5%) met our NVS criteria. There was no significant difference in sex, body weight, age, HBeAg status, alanine transaminase levels, bilirubin levels and elastography between those with and without successful viraemic suppression (p-values > 0.05). There was a significant difference in HIV status (p-value 0.02) with 20/25 (80%) of those not virologically suppressed living with HIV. 11/20 (55%) had > 1 log10 difference in HBV and HIV viraemia. 9/11 (81.8%) were on TDF-based therapy and 66.7% had achieved HIV suppression (HIV RNA < 50 IU/mL) but not HBV suppression.

Conclusion: In this cohort of adults living with HBV infection, about 1 in 3 is on treatment. Among those treated for at least a year, HBV viraemia was not suppressed in 38.5%, leaving a potential risk for disease progression and transmission. Those with HBV/HIV co-infection in whom HIV viraemia is suppressed but HBV is not have a clinical phenotype suggestive of potential drug resistance.

52

Demographic and Treatment Factors Associated With Early Loss to Follow Up Among Patients With Chronic Hbv Infection at a Tertiary Hospital in Zambia

Sinkala E[1], Chirwa R[2], Mwila F[2], Fwoloshi S[3], Chama E[2], Mulenga L[3], Fwambo M[1], Kankasa C[2], Mulenga D[3], Vinikoor M[4]

[1]University of Zambia, School of Medicine, Lusaka, Zambia, [2]University Teaching Hospital, Paediatric HIV/AIDS Center of Excellence, Lusaka, Zambia, [3]University Teaching Hospital, Paediatric HIV/AIDS Center of Excellence, Lusaka, Zambia, [4]University Teaching Hospital, Adult HIV/AIDS Center of Excellence, Lusaka, Zambia, [5]University Teaching Hospital, Paediatric HIV/AIDS Center of Excellence, Lusaka, Zambia,

[6]University Teaching Hospital, Adult HIV/AIDS Center of Excellence, Lusaka, Zambia, [7]University Teaching Hospital, Paediatric HIV/AIDS Center of Excellence, Lusaka, Zambia, [8]University Teaching Hospital, Paediatric HIV/AIDS Center of Excellence, Lusaka, Zambia, [9]University Teaching Hospital, Adult HIV/AIDS Center of Excellence, Lusaka, Zambia, [10]University of Alabama at Birmigham, Alabama, USA

Background: Chronic HBV infection can cause cirrhosis and hepatocellular carcinoma. Many patients with chronic HBV infection require long-term follow up. However, many patients do not require immediate antiviral therapy (AVT), which could undermine retention in care. We now describe some of the demographic and treatment factors associated with early loss to follow up in these patients.

Methods: We analyzed data from a new HBV clinic that was integrated within a referral HIV clinic at the University Teaching Hospital (UTH), Lusaka, Zambia, with initial catalytic funds from The Hepatitis Fund (Geneva, Switzerland). Upon enrollment, patients were evaluated by dedicated clinicians, with a focus on AVT eligibility using local guidelines. Patients eligible for AVT were commenced on tenofovir-based treatment while others were asked to return for reassessment of eligibility in 3-6 months. We performed a bivariable and multivariable logistic regression to identify the correlates of early loss to follow-up (LTFU). We considered the following parameters in the model; age (year), gender, mode of HBV diagnosis, AVT history, education level and income levels.

Results: We evaluated 554 adult patients with HBV infection of whom 267 (48%) were females. The median age was 36 years (29, 45). Most of the patients learnt about their HBV status through routine medicals for employment or education purposes. Majority of the patients were asymptomatic. For analysis, we excluded 117 patients with missing data on education and/or income, and analyzed 437 patients, of whom 154 were classified as LFTU. LTFU was similar between patients who received AVT or did not (15% versus 20%). In multivariable logistic regression analysis, patients above 40 years (AOR=0.51, P=0.01) were less likely and males (AOR=1.9, P=0.006) were more likely to have LTFU. Other parameters such as mode of HBV diagnosis, education level and income level had no significant bearing on LFTU.

Conclusions: Worryingly, LTFU was highest among younger males with HBV, a group that has high risk of complications. This group is also in a specialized HBV clinic with additional resources, LTFU was unacceptably high overall. More research on retention in chronic HBV care models in Africa is needed.

53

Abstract 53 was withdrawn.

54

Molecular Diversity of Hepatitis B Virus Among Pregnant Women in Amhara National Regional State, Ethiopia

Teferi M[1], Moges F[1], Tiruneh M[1], Gelaw A[1], Million Y[1], Adefris M[1], Belyhun Y[1,2], Gerd L[2], Maier M[2]
[1]University of Gondar, Gondar, Ethiopia, [2]Leipzig University , Leipzing, Germany

Background: Despite the availability of effective vaccines and treatments for hepatitis B virus (HBV), it continues to be a major public health problem in sub-Saharan Africa including Ethiopia. Routine screening for HBV in pregnant women is widely recommended, but there is a lack of screening for HBV during pregnancy in Ethiopia. Therefore, this study aimed to assess viral load, and genetic diversity among pregnant women in the Amhara National Regional State, Ethiopia.

Methods: Hepatitis B surface antigen (HBsAg) testing was performed on 1846 pregnant women, 85 of those who tested positive were included in this study. HBV DNA was isolated from 85 positive sera, and the partial surface/polymerase gene was amplified and sequenced. HBV genotypes, sub-genotypes, serotypes and mutations in surface genes and polymerase were studied.

Results: Out of 85 pregnant women's HBsAg positive sera, 59(69.4%) had detectable viral DNA. The median viral load was 3.4 log IU/ml ranging from 2.6 to7.6 and 46 samples were successfully sequenced and genotyped. Genotypes A and D were identified in 39 (84.8%) and 7(15.2%); respectively. All genotype A isolates were further classified into sub-genotype A1 and serotype adw2 (84.8%) whereas genotype D isolates were further classified into three

sub genotypes; 2 (4.3%) D2, 1(2.2%) D4, and 4 (8.7%) D10 with serotypes ayw2 (10.9%),and ayw3 (4.3%). There were 19 (41.3%) surface gene mutations in the major hydrophilic region (MHR). Six (13.1%) of them were discovered in MHR's 'a'-determinant region. Six polymerase gene mutations (13%) were identified.

Conclusion: Genotype A was the predominant genotype in the Amhara National Regional State. The surface and polymerase gene mutations identified in this study may lead to immune therapy failure, diagnostics escape and drug resistance. Thus, the data generated in this study will contribute to the planning of HBV diagnosis, vaccination and treatment, and most importantly to the prevention of vertical transmission of HBV in Ethiopia. Therefore, further molecular studies on HBV are warranted and continuous surveillance is important for patient management and for the prevention and control of HBV infection in the country

55

Laboratory Networks and Sample Transportation Systems' Performance in Improving Hepatitis B Care in Uganda

Kasone V[1], Nabitaka L[2], Olal E[3], Okiira C[1], Namulindwa C[1], Alikulilwe A[1], Nyegenye W[1], Kyokushaba J[1], Beyagira R[5], Ponsiano O[4], Kiyaga C[1], Ssewanyanna I[1]

[1]Uganda National Health Laboratory Services, kampala, Uganda, [2]AIDS Control Program , kampala, Uganda, [3]Clinton Health Access Initiative, kampala, Uganda, [4]Makerere University, college of health sciences, kampala, Uganda, [5]Uganda National Expanded program of Immunization., kampala, Uganda

Background: Hepatitis B (HBV) contributes to significant premature deaths globally. Uganda's National Hepatitis Strategy and National Guidelines for Managing Hepatitis B aim at a 90% diagnosis rate for HBV and better care linkage by 2030. The Ministry of Health has established an integrated HBV screening, diagnosis, care, treatment, and monitoring system. Laboratories at sub-national level perform hepatitis B surface antigen rapid diagnostic testing; positive samples are transported to the Central Public Health Laboratory (CPHL) through a National Sample and Results Transport Network (NSTRN), for viral load testing. This abstract focuses on assessing the performance of this system in enhancing access to HBV treatment in Uganda,

Methods: We used data from the National HBV reporting systems; DHIS2, LIMS from May 2022 to May 2023. CPHL received HBsAg+ blood samples from the general population and pregnant women for HBV VL testing. This analysis estimated HBV screening and VL coverage, stratifying the results by the general population and pregnant women. We also calculated the median turn-around time between sample collection and results release. STATA 17 was used for the analyses.

Results: A total of 1,055,860 clients were screened for HBV, 69.9% of these were pregnant women. Overall HBV prevalence (HBsAg+) was 28,384 (3.4%): 1.6% and 5.2% respectively, among pregnant women and the general population. A total of 19,143 (67%) HBsAg+ samples were received at CPHL from 659 HBV testing facilities. Most HBV VL samples were for females 10,002 (51.9%), of which 738573 (46.1%) were pregnant. The median VL was146 copies IU/ML (IQR: 19-1842). 2,658 of 18,342 (14.5%) clients among the general population had VL >20,000 IU/ml, while 71 (8.7%) of pregnant women had VL >200,000 IU/ml and respectively eligible for treatment and prophylaxis. The median external and internal Laboratory turn-around time was 13 days (IQR: 9, 17).

Conclusion: Uganda's laboratory network enables two thirds of HBV patients to receive VL results within two weeks. Priority is given to pregnant women to prevent vertical HBV transmission. However, this falls short of the 90% national diagnostic target highlighting the need to address health systems gaps for comprehensive HBV care and treatment.

56

Management of Chronic Hepatitis B at Army Medical and Surgical Center of Bamako: A Puzzle to Be Completed

Diallo L[1], Diaby L[1], Cissoko Y[2,3], Ouologuem M[1], Fortes L[4,5]

[1]Army Medical and Surgical Center of Bamako., Bamako, Mali, [2]Department of infectious diseases, CHU du Point G, Bamako., Bamako, Mali, [3]University of Sciences, Technics and Technologies of Bamako (USTTB)., Bamako, Mali, [4]Department of infectious diseases, Hôpital Dalal Jam, Senegal., Dakar, Sénégal, [5]Cheick Anta Diop University (UCAD), Dakar, Senegal., Dakar, Sénégal

Background: Hepatitis B is a public health concern worldwide. Mali is a country of high endemicity (>8%). Although asymptomatic in most cases, chronic hepatitis B exposes to complications that can be fatal and requires monitoring and/or treatment which remains difficult in our context. The aim of this study was to evaluate the management of chronic hepatitis B at Army Medical and Surgical Center of Bamako in Mali.

Methods: This was a retrospective study carried out from January 1, 2016 to December 31, 2019 at Army Medical and Surgical Center of Bamako. We included all patients with chronic hepatitis B under treatment or not. Epidemiological, clinical, ultrasound and serological and virological data were collected from medical records and then analyzed using Epi-info software.

Results: During the study period, 671 patients with a positive HBsAg were seen in consultation out of a total number of 7455 patients, i.e., a seroprevalence of 9%. Chronic hepatitis B was proven in 172 patients. There was a clear male predominance (Sex-ratio: 2.74). Mean age of patients was 41 ± 14 years. Clinically, most patients were asymptomatic (71.5%). Biologically, ALT levels were superior to twice SLN in 30% of the cases. On abdominal ultrasound, 35.5% of cases showed heterogeneous hepatomegaly, 20% ascites and 5% splenomegaly. The viral load was ≥2.000IU/ml in 39.8% of cases. Of the 172 patients with chronic hepatitis B, 101 was declared eligible to treatment (58.7%). Eligibility criteria were not clearly defined. Noninvasive liver fibrosis assessment tests were not performed because they were not available or not affordable for patients. At one year follow-up ALT control was performed in only 4.95% of the patients and no patient had viral load. The lost at follow-up rate was 64,5% and the other patients were followed irregularly. Factors associated with regular follow-up and good adherence to treatment were educational and socioeconomic levels.

Conclusions: Management of chronic hepatitis B has many gaps which must be addressed by training health workers and strengthening hepatitis program to reduce its burden.
Keywords: Hepatitis B, evaluation, management, Bamako.

57

Who to Treat: The Impact of Expanded Eligibility for Hepatitis B Treatment in the Hepatitis B in Africa Research Network (HEPSANET) study

Stockdale A[1], Johannessen A[3], Andersson M[4], Davwar P[5], Desalegn H[6], Fall F[7], Guingane A[8], Maponda T[9], Matthews P[10], Okeke E[5], Paul D[5], Seydi M[11], Sinkala E[12], Shimakawa Y[13], Sombie R[14], Sonderup M[15], Spearman C[15], Riches N[16,17], Taljaard J[9], Vinikoor M[12], Wandeler G[18], Lemoine M[19]

[1]University of Liverpool, Liverpool, United Kingdom, [2]Malawi Liverpool Wellcome Trust Research Programme, Blantyre, Malawi, [3]University of Oslo, Oslo, Norway, [4]University of Oxford, Oxford, UK, [5]Faculty of Medical Sciences, University of Jos, Jos, Nigeria, [6]Medical Department, St. Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia, [7]Dakar Main Hospital, Dakar, Senegal, [8]Bogodogo University Hospital Center, Ouagadougou, Burkina Faso, [9]Division of Medical Virology, Stellenbosch University Faculty of Medicine and Health Sciences and National Health Laboratory Service Tygerberg Business Unit, Cape Town, South Africa, [10]Francis Crick Institute, London, UK, [11]Department of Infectious and Tropical Diseases, Regional Center for Research and Training, Fann National University Hospital Center, Dakar, Senegal, [12]Department of Internal Medicine, University of Zambia, Lusaka, Zambia, [13]Epidemiology of Emerging Diseases Unit, Institut Pasteur, Paris, France, [14]Département d'Hépato-gastroentérologie, Yalgado Ouédraogo University Hospital Center, , Ouagadougou, Burkina Faso, [15]Division of Hepatology, Department of Medicine, Faculty of Health Sciences, University of Cape Town, , Cape Town, South Africa, [16]Department of Clinical Sciences and International Public Health, Liverpool School of Tropical Medicine, Liverpool, UK, [17]Malawi Epidemiology and Intervention Research Unit, Lilongwe, Malawi, [18]Department of Infectious Diseases, Bern University Hospital, University of Bern, Bern, Switzerland,

[19]*Department of Metabolism, Digestion and Reproduction, Imperial College London, London, UK*

Background: European (EASL) and World Health Organisation (WHO) hepatitis B guidelines are being revised and are expected to recommend expanded use of antiviral therapy. Benefits could include reduced hepatocellular carcinoma and cirrhosis incidence, reduction in HBV transmission, and HIV prevention. Current treatment criteria are based on ALT, HBV DNA, and non-invasive assessment of liver fibrosis. We assessed the proportion of people living with hepatitis B (PLHBV) who require treatment according to hypothetical expanded criteria.

Methods: We analysed individual participant data in the HEPSANET database among PLHBV with available pre-treatment HBV DNA, excluding hepatitis C or D, HIV, ALT/AST>5x the upper limit of normal (ULN) and suspected hepatocellular carcinoma. We considered two scenarios: 1: where only transaminases and full blood count are available, using criteria APRI >0.36 and/or ALT>40 U/L and 2: additionally with HBV DNA quantification >2000 IU/ml. We compared to current EASL 2017 and WHO 2015 criteria.

Results: Among 2774 patients from 9 centres in 6 countries, median age was 32 (IQR 28, 42) and 1643/2774 (59.2%) were males. HBV DNA was detectable (>50 IU/ml) in 2098/2774 (75.6%) and >2000 IU/ml in 879/2774 (31.7%). ALT exceeded sex-specific ULN (30 for men and 19 for women) in 1376/2761 (49.8%) and was >40 U/L in 434/2761 (15.7%). APRI was >0.36 in 1041/2702 (38.5%) and >0.65 in 355/2702 (13.1%). Under existing criteria (WHO 2015 and EASL 2017 criteria), 354/2546 (12.3%) and 451/2774 (16.3%) were treatment-eligible at initial assessment, respectively. In scenario 1: APRI> 0.36 or ALT>40, 1129 (41.8%) would be treatment-eligible, and in scenario 2 additionally treating PLHBV with HBV DNA >2000 IU/ml, 1579 (58.5%) would be eligible. In a subgroup analysis, PLHBV diagnosed through asymptomatic screening (community, blood donor, family or antenatal testing), scenario 1 and 2 criteria would be met in 828/2275 (36.4%) and 1220/2275 (53.6%), respectively.

Conclusions: Over one third of PLHBV diagnosed through asymptomatic screening have elevated ALT or APRI >0.36 at initial assessment, and additionally treating those with HBV DNA>2000 IU/ml would make over half eligible for antiviral therapy. The impact and financial implications should be considered before implementing new eligibility criteria into national programmes.

58

Evaluating the Performance of Low-Cost Non-invasive Liver Fibrosis Markers Among Patients With Chronic Hepatitis B Viral Infection Seen at a Tertiary Hospital in Lusaka, Zambia

Mpisa S[1], Kanunga A[2], Vinikoor M[3], Sinkala E[1]
[1]*University of Zambia, School of Medicine, Lusaka, Zambia,* [2]*University Teaching Hospital, Lusaka, Zambia,* [3]*University of Alabama at Birmigham, Alabama, USA,* [4]*University of Zambia, School of Medicine, Lusaka, Zambia*

Background: Hepatitis B virus (HBV) is common in Zambia and contributes to high mortality and morbidity due to cirrhosis or hepatoma. Confirming liver cirrhosis requires a liver biopsy, but this is invasive. Fibroscan can diagnose cirrhosis, but it is scarce in low-income countries. We need cheap non-invasive methods of assessing liver fibrosis. We set to evaluate how aspartate platelet ratio index (APRI) and Fibrosis-4 (FIB-4) index predict liver cirrhosis in treatment naïve patients with chronic HBV mono-infection.

Methods: This analytical cross-sectional study took place at the University Teaching Hospital, Lusaka, Zambia in 2022. We defined cirrhosis as Fibroscan score of ? 9.6 kPa. To assess liver fibrosis using non-invasive markers we used FIB-4 and APRI. We performed record chart reviews for the consenting patients and used a validated questionnaire. Data was analysed using SPSS software version 27.0 (IBM Corp., Armonk, NY, USA). The sensitivity analysis by means of cross tabulation was used to determine the performance of low-cost markers. Adjusted odds ratios were estimated by logistic regression analysis.

Results: 239 adults were enrolled in ratio of 3:2 (F:M). The mean (±SD) age (years) was 34.7±10.6. Based on the Fibroscan scores, the prevalence of

cirrhosis was 16.3% (95% CI: 11.87-21.63). Based on the multivariate logistic regression analysis, FIB-4>3.25 was the strongest predictor of cirrhosis (AOR: 129.3, 95% CI: 23.5 – 703.7, P <0.001), APRI with a 0.65 cut off was a better predictor (AOR: 18.6, 95% CI: 7.0 – 49.5, P < 0.001) of cirrhosis compared to APRI 0.5 cut off (AOR: 15.9, 95% CI: 6.0 – 42.3, p < 0.001). Alcohol use reduced the performance of these markers; APRI 0.65 threshold had (AOR:30.19, 95% CI 7.95-114.7, P<0.001) among those who never drank alcohol compared to (AOR:5.29, 95% CI 0.39-72.6, P<0.21) in current drinkers and (AOR19.11, 95CI 3.76-97.1, P<0.001) in past drinkers.

Conclusions: Non-invasive serum markers of fibrosis (APRI, FIB-4) correlated with Fibroscan scores in diagnosis of liver cirrhosis among patients with chronic HBV. Alcohol use, may reduce the performance of these markers in predicting cirrhosis, underscoring the need to consider alcohol use as part of hepatitis clinical care.

59

Hepatitis B App to Increase Awareness of Disease and Linkage to Care in Africa

Debes J[1], Tappata M
[1]*University of Minnesota, Minneapolis, United States*

Hepatitis B virus (HBV) infection is highly prevalent and highly lethal in the African continent. HBV is usually silent with minimal symptoms until the development of cirrhosis or liver cancer. Therefore, awareness, testing and linkage to care are critical to decrease mortality. Awareness of disease and appropriate initial care by healthcare providers can be scarce in rural regions of the continent. We designed an app as a potential intervention to improve these issues.
An app named “HBV Africa” was designed to be functional in android and iOS devices. The app provides simple information related to HBV including: a) Basics on Hepatitis B, b) Clinical manifestations and c) Approach to a patient with HBV. Each section consists of several subsections with simple to understand messages regarding each aspect, including approach to the pregnant patient and the importance of birth-dose vaccination. A fourth section is designed as “How to teach your community about Hepatitis B” and this section includes key messages in increasing awareness about HBV, focusing and points such as: HBV is common, silent, preventable and manageable. The section includes a 2-minute video as an example of how to teach in short periods of time, to the lay person the basics of hepatitis B and vaccination. Finally, the app includes a survey focused on HBV knowledge in the general community to further understand current needs. The app is currently designed in English, but we intent to provide it in different local languages to maximize distribution and effectiveness.
We expect the use of the app to aid providers in rural and isolated areas of Africa to better understand this lethal disease, help them in the initial management of patients and increase awareness by educating communities about HBV.

60

HBV Treatment Uptake Among Rwandan People With HIV and HCV Co-infections: A Cohort Study From 2016-2019

Makuza J[1,2,3], Jeong D[1,2], Soe P[1], Adu P[2], Binka M[2], A. Velásquez García H[1,2], Nisingizwe M[1], Tuyishime A[3], Rose C[1,2], Ramji A[4], Zafar Janjua N[1,2]
[1]University of British Columbia, School of Pupulation and Public Health, Vancouver, Canada, [2]British Columbia Centre for Disease Control, Vancouver, Canada, [3]Rwanda Biomedical Center, Kigali, Rwanda, [4]University of British Columbia, Division of Gastroenterology, Vancouver, Canada

Background: Treatment of chronic HBV infection is associated with preventing complications such as cirrhosis, HCC, and overall improved survival. In SSA, data on HBV treatment uptake is limited overall and among people living with HIV. We assessed the HBV treatment uptake and associated factors among people diagnosed with HBV mono-infection and HBV/HIV co-infection in Rwanda during 2016-2019.

Methods: We used data from the DHIS2, including 915,800 individuals screened for HBV in Rwanda from January 2016 to December 2019. According to Rwanda's national HBV prevention and treatment guidelines, individuals were included if

they were >2 years old and had information on HBV treatment eligibility criteria. HBV treatment uptake was the study's primary outcome, defined as the proportion of individuals who received HBV treatment among those who met the eligibility criteria. We estimated the proportions of treatment uptake and assessed factors associated with HBV treatment uptake to account for confounders through multivariable logistic regression.

Results: Among 22,570 individuals with HBV infection, 3,750 (1,986 with HBV mono-infection, 1,764 with co-infection HBV/HIV, 14 with co-infected HBV/HCV, and 5 with HBV/HCV/ HIV triple infection) were eligible for HBV treatment during the study period. Among all individuals, 246 with HBV mono-infection (12.3%) and 31 (1.8%) with HIV/HBV co-infection had cirrhosis. About 2,584 (68.9%) individuals started HBV treatment during the study period. People with HBV mono-infection had a greater proportion of treatment uptake compared to those with HBV/HIV co-infection [1,601 (80.6%) vs. 983 (55.7%)]. In the multivariable model, HIV coinfection (adjusted odd ratio [aOR]: 0.46; 95%CI: 0.32–0.66) was associated with a lower likelihood of HBV treatment uptake. Follow-up at provincial and referral hospitals (aOR: 6.09; 95% CI: 2.50–14.83) compared to follow-up at district hospitals, and having health insurance for public and private employees compared to having community-based health insurance (aOR: 2.53; 95%CI: 1.03–6.26) were associated with higher treatment uptake.

Conclusion: This study found that the treatment initiation was low overall during the study period, especially among people with HBV/HIV and HBV/HCV co-infections. These findings highlight the need for scale-up of HBV care and treatment, especially in people with HIV and HCV co-infection.

61

Hepatitis B Virus Prevalence and Associated Risk Factors in Households of Kinshasa, Democratic Republic of Congo

Morgan C[1], **Ngimbi P**[2], Mbonze N[2], Tabala M[2], Kashamuka M[2], James L[1,3], Yotebieng M[4], Mampunza S[3], Thompson P[1], Parr J[1]
[1]University Of North Carolina At Chapel Hill, Chapel Hill, United States, [2]École de Santé Publique, Université de Kinshasa, , Democratic Republic of Congo, [3]Université Protestante au Congo, Kinshasa, Democratic Republic of Congo, [4]Albert Einstein College of Medicine, New York, USA

Despite hepatitis B virus (HBV) prevalence of 3-5% in the Democratic Republic of Congo (DRC) our understanding of context-specific transmission patterns is limited. To characterize transmission and inform prevention efforts in Kinshasa, we conducted the cross-sectional Horizontal and Vertical Transmission of Hepatitis B household study.

We introduced HBV surface antigen (HBsAg) screening during routine antenatal care in high-volume maternity clinics in Kinshasa and recruited households of pregnant women (“index mothers”) with and without HBV (“exposed” and “unexposed”, respectively). Enrolled household members underwent HBsAg testing, dried blood spot sampling, and an epidemiological survey. We used multilevel regression to evaluate HBV prevalence and risk factors.

Among 200 households (100 exposed, 100 unexposed) across Kinshasa, we enrolled 1,006 participants: 200 index mothers, 475 direct offspring of index mothers, 86 male partners of index mothers, and 245 other household members. In addition to known HBsAg infections among index mothers, we observed 27 HBsAg-positive household members and clusters of ≥2 HBsAg infections (range 2-6) in 14 households. Participants in exposed households had 2.73 (95%CI: 0.3, 27.2) higher HBsAg prevalence compared with those in unexposed households. Among direct offspring, those with HBsAg-positive mothers had 3.25 (95%CI: 0.09, 120.82) times the HBsAg prevalence compared with those with HBsAg-negative mothers. Among index mothers,

never marrying (Odds ratio [OR] 0.39, 95%CI: 0.14, 0.96) was associated with lower HBsAg positivity, while having multiple sexual partners in the last 3 months was associated with higher HBsAg positivity (OR 4.41, 95%CI 1.35, 19.82). Among direct offspring of index mothers, one-year increase in age (OR: 1.49, 95%CI: 1.09, 2.04) and lack of infant HBV vaccination (OR: 17.88, 95%CI: 1.43, 224.44) were associated with higher HBsAg positivity.

We observed evidence of ongoing HBV transmission between mothers and children and within households in Kinshasa, as well as evidence that the introduction of routine infant HBV vaccination in 2007 has reduced transmission. Among index mothers, we observed community exposures like sexual contact could be a source of ongoing horizontal transmission. These findings emphasize the need for expanded HBV prevention in DRC, including antenatal screening, birth-dose vaccination and protection during sexual contact.

62

Prospective Comparaison of Transient Elastography, Fibrometer, APRI and FIB-4 With Liver Biopsy For the Assessment of Fibrosis in Chronic Hepatitis B

Debzi N[1], BELIMI H[1], GUESSAB N[1], AIT YOUNES S[2], KERBOUCHE R[1], AFREDJ N[1], OULED CHEIKH I[1], MERNIZ M[3], YARGUI L[4], GOURARI S[5], AMIR Z[6]
[1]CHU MUSTAPHA PACHA, Algiers, Algeria, [2]Pathology Department, CHU NAFISSA HAMOUD, Algiers, Algeria, [3]Infectiology Department, M'sila Hospital, M'SILA, Algeria, [4]Biochemistry Department, CHU MUSTAPHA PACHA, Algiers, Algeria, [5]Virology Department, CHU MUSTAPHA PACHA, Algiers, Algeria, [6]Pathology Department, CHU MUSTAPHA PACHA, Algiers, Algeria

Background: The diagnosis of significant fibrosis (≥ F2)is a crucial for initiation of treatment in patients with chronic hepatitis B (CHB). This study aim to compare the noninvasive methods (NIM) for assessing liver fibrosis,like Fibroscan (FS), Fibromètre (FM), APRI and FIB-4 with liver biopsy (LB) .

Methods: The indication for LB in CHB is indicated according to EASL guidelines 2012, NIM (FS, FM, APRI, FIB-4) were performed the day of the LB. All biopsy specimens were analyzed by two experienced pathologists, blinded to the results of the NIM. Histological lesions were staged according to Metavir score. For statistical analysis , we used SPSS 21 software , the predictive capacity of the non-invasive tests was assessed using an ROC (Receiver Operating Characteristic) curve. Optimal cut offs for non-invasive tests are calculated by maximizing both sensitivity and specificity for FS, FM, APRI and FIB-4. The comparison of AUROCs is carried out with a Delong test (value significant if P< 0.05) . The independent factors associated with the noninvasive test are identified by a univariate and multivariate model.

Results: 140 patients underwent LB ,the mean age was 37.91 years [18 - 82], Sex-ratio M/F of 1.74. Metavir fibrosis stages were:2.9 % F0 (n=4); 53 .6 % F1 (n= 75); 20 %F2 (n= 28); 18.5% F3 (n=26); 5. % F4(n= 7). AUROC of FS, FM, APRI, FIB 4 were respectively 0.82; 0.69; 0.69 and 0.63 for the diagnoses of significant fibrosis (F≥2) and 0.92 , 0.79, 0.77 and 0.89 for cirrhosis (F4). Optimal LSM cut-off values were respectively 7.2 and 9.6 kPa for F ≥2 and F4.

Conclusion: This study shows that Fibroscan is an efficient technique for the assessment of fibrosis in patients with chronic hepatitis B. it reduce significantly the use of LB.

63

Where Do Those Data Go? Reuse of Screening Results From Clinical Trials to Estimate Population Prevalence of Hbv Infection in Adults in Kilifi, Kenya

Downs L[1,2], Campbell C[1], Ngetsa C[2], Kapulu M[1,2], Warimwe G[1,2], Scott A[2,3], Obiero C[2], Abbouyannis M[2,5], Hamaluba M[1,2], Andersson M[4,10], Githinji G[2,6], Matthews P[7,8,9], Etyang A[1,2]
[1]Nuffield Department of Medicine, University of Oxford, Oxford, United Kingdom, [2]KEMRI-Wellcome Trust Research Programme, Kilifi, Kenya, [3]London School of Hygiene and Tropical Medicine, London, United Kingdom, [4]Oxford University Hospitals, Oxford,

United Kingdom, [5]Liverpool School of Tropical Medicine, Liverpool, UK, [6]Department of Biochemistry and Biotechnology, Pwani University, Kilifi, Kenya, [7]The Francis Crick Institute , London , United Kingdom, [8]Division of Infection and Immunity, University College London, London, UK, [9]University College London Hospital , London, United Kingdom, [10]Radcliffe Department of Medicine, University of Oxford, Oxford, UK

Background: Chronic hepatitis B (CHB) is a serious but underestimated disease burden in Africa with most screening focussed on populations with specific risk factors. Many clinical trials in the WHO Africa region however screen for HBV to determine trial eligibility, but data are not routinely presented, collated, or analysed. We collated data from studies previously conducted at KEMRI-Wellcome Trust Research Programme (KWTRP), Kilifi, Kenya that screened healthy volunteers for HBsAg, aiming to i) Determine the potential scale of data from clinical studies, and ii) Derive an HBsAg prevalence estimate from these data.

Methods: We identified completed studies that had screened adults (≥18 years) for HBsAg (± Alanine aminotransferase, ALT levels), between 2010-2022 at KWTRP (ethics approval SERU 4565, OxTREC 22-23). Data were collated from laboratory and individual study databases or archived paper documentation. Data were analysed using R (version 4.2.0).

Results: Six studies were identified, conducted between 2016 - 2022, representing 1731 adults. Demographic data were available for 1646 participants, of whom the majority were male (1268/1646, 77%), median age 28 years (IQR 23 – 36 years). 1727 HBsAg results were available (1727/1731, 99.8%) of whom 60/1727 were HBsAg positive, giving a period prevalence estimate of 3.5%. Those aged 36-45 years had the highest HBsAg prevalence (20/326, 5.8%). 1462/1727 participants had ALT measured (85%, range 7 – 333 U/L). Median ALT was significantly higher in those who were HBsAg positive (24 vs 28 U/L, Wilcoxon rank sum p= 0.017).

Conclusions: Here we use existing clinical trials data to estimate HBV seroprevalence in Kilifi, Kenya, highlighting an underused data resource. This estimate was obtained without any extra laboratory or fieldwork and is therefore a highly efficient surveillance exercise. Significantly higher ALT in those with HBV demonstrates a burden of inflammatory liver disease associated with infection, highlighting the diagnostic need allowing closer monitoring and treatment. The male excess here is striking and results in an underrepresentation of HBV prevalence in women. The value of this data justifies the archiving of all hepatitis serology and liver enzyme data, to enable further modelling of HBsAg prevalence nationally and internationally across the WHO African region.

64

Alternative Strategies to Scale up Hepatitis B Follow-up in the Gambia: Results From an Outreach Mobile Clinic Approach Using Portable Diagnostics and Dried Blood Sampling

Bah S[1], Ingiliz P[2], Jatta A[1], Bangura R[1], Bojang L[1], Ceesay A[1], Vo Quang E[2], Touray F[1], Barry J[1], Nyassi F[1], Yoshida K[3], Ndow G[1], Lemoine M[3]
[1]Medical Research Council The Gambia, Banjul, Gambia, [2]University Hospital Henri-Mondor, Berlin, Germany, [3]Imperial College London, London, United Kingdom

Background: Scale up of chronic hepatitis B (CHB) care to remote areas is essential to increase access to diagnosis, monitoring and treatment. We assessed the feasibility and of an outreach mobile clinic initiative to scale up CHB care in rural Gambia and compared outcomes with patients assessed in centralized health facilities.

Methods: The outreach mobile targeted consenting CHB patients living in rural communities who were unable to attend specialized clinics for reassessment. The team comprised a clinician, nurse and field assistant, and assessed patients in their homes using a portable handheld Butterfly ultrasound probe and portable Fibroscan machine. Fingerpick blood samples were collected on dried blood spot cards to measure HBV DNA viral load and ALT. Clinical and demographic data were collected offline into REDCap using tablets.

Results: Among 158 patients offered to be assessed in this outreach clinic, 100 accepted and were assessed between November 2019 and February 2020. Patients were predominantly female (75%) with a mean age of 48 years and none were on antiviral therapy for CHB infection.

Twenty-nine (29%) had hypertension, 3 (2%) had diabetes (2%) and 48 (48%) reported taking herbal medication for various indications. Median fibroscan score was 5.4kPa (IQR 4.3-6.5) with 3/96 (3%) patients having cirrhosis. Ultrasound scan was normal in 76/100 patients, with hyperechoic liver tissue present in 22/100 and heterogeneous liver parenchyma in 2/100. HBV DNA viral load was undetectable in 56/93 (55%) patients and ALT was <40IU/L in 91/97 (93.8%). Four patients had ALT >40IU/L of whom 2 had ALT >80IU/L. Using the 2017 EASL guidelines, 9/96 patients (9.4%) met criteria for antiviral therapy.

Conclusion: The hepatitis B outreach mobile clinic was well accepted in rural Gambia and was efficient for monitoring CHB patients and identifying newly eligible patients for antiviral therapy. Further research and implementation considerations are necessary to fully realize the benefits of mobile clinics in improving hepatitis B outcomes Africa.

65

Incidence and Patterns of Alanine Transaminase (ALT) Fluctuations in Hepatitis B Patients in the Gambia

Sumareh N[1], Drammeh S[1], Bangura R[1], Lemoine M[1,2], Ndow G[1,2]
[1]MRC Unit The Gambia at LSHTM, Fajara, Gambia, [2]Imperial College London, London, United Kingdom

Background: Alanine transaminase (ALT) is used to assess treatment eligibility and response in chronic hepatitis B (CHB) infection. However, the upper limit of normal (ULN) for ALT in African populations is poorly studied. We assessed the ALT ULN among healthy controls in The Gambia and the incidence and patterns of ALT fluctuations among CHB patients.

Methods: This retrospective study used the 2.5th and 97.5th percentile method to determine ALT ULN among healthy controls seen in the MRCG Clinical Laboratory between 2015-2021. We then assessed changes in ALT during followed using data from CHB participants enrolled in the PROLIFICA study between 2011-2014 and followed-up until 2018-2021.

Results: Among 434 healthy controls, median age was 41years, 42% male, 13.3% smoked, 5.3% ever drank alcohol and 9.7% were obese. After excluding HIV (15/433, 3.5%) or HCV (6/432, 1.4%) positive individuals, the lower and upper limits of ALT were 7.2IU/L and 40.8IU/L for men and 6.0IU/L and 38.0IU/L for women.

After excluding patients with cirrhosis (n=38) or HCC (n=2), 913 CHB patients were included in this analysis. Median age was 31years, 61% male, 13.0% smoked, 6.6% ever drank alcohol and 8.7% were obese. HBeAg status was positive in 34/753 (4.5%) and 6/746 (0.8%), 24/902 (2.7%) and 21/889 (2.4%) were HDV, HIV and HCV co-infected respectively. Of 704 with baseline HBV DNA, 45 had viral load >20,000IU/mL and 23 had viral load between 2,000-20,000IU/mL. Median baseline liver stiffness measurement was 4.9kPa and median ALT was 22IU/L with 87/897 and 16/897 having ALT >40IU/L and >80IU/L respectively.

The mean rank of ALT among 897 patients at baseline was 621.7, compared to mean rank of 553 among 588 reassessed after a median follow-up of 6years (IQR:5.5-6.8). ALT fluctuations within individual patients, and relationship of ALT changes and viral load, liver stiffness and stage of CHB disease is being analysed.

Conclusion: ALT ULN in this study is similar to commonly used international threshold. Preliminary analysis shows ALT fluctuation among non-cirrhotic CHB patients is not significant suggesting a single ALT measurement could be used for assessment. This finding needs to be confirmed in large longitudinal cohort studies in Africa.

66

Seroprevalence of Viral Hepatitis and Its Associated Factors Among Adults With Opioid Use Disorders in Dodoma, Tanzania

Mohamed S[1]
[1]*MNAZI MMOJA REFERAL HOSPITAL, UNGUJA, Tanzania, United Republic of*

Background: Viral hepatitis especially hepatitis B (HBV) and hepatitis C (HCV) infections are quite common among opioid drug users. Chronic HBV and HCV may result in decompensated liver cirrhosis and hepatocellular carcinoma. Harm reduction and treatment of chronic HBV and HCV can reduce morbidity and mortality whereas elevated serum alanine aminotransferase (ALAT) may predict HBV and HCV infections among adults with opioid use disorders.

Objective: To determine the seroprevalence and factors associated with HBV and HCV infections and their relationship to serum ALAT among the adults with opioid use disorders in Dodoma, Tanzania.
Methods: A cross-sectional study design was conducted from December 2020 to January 2021in which convenience sampling technique was used to recruit the opioid use disorders placed on MST at Itega methadone assisted therapy clinic center. Binary logistic regression was used to find the factors associated with HBsAg and HCV antibodies (anti-HCV) in relation to serum ALAT levels.

Results: Out of 254 participants,majority were males 235 (92.5%), unmarried 177 (69.7%), living in urban 251 (98.8%) and self-employed 219 (86.2%)where the mean age was 34.8±7.3 years. Seroprevalence of HBsAg and anti-HCV among the participants were 9.8%and 25.2% respectively. HIV infection was independent associated with positive HBsAg (AOR = 9.91, p-value = <0.0001).The odds of serologic evidence of anti-HCV were higher among the participants who used heroin through injection (AOR= 6.71, p-value = 0.0002), inconsistence condom use(AOR = 3.35, p-value = 0.034), multiple sexual partners (AOR = 10.56, p-value = 0.0003)and methadone dose for more than 120mg (AOR = 5.01, p-value = 0.0003) and criminal justice involvement (AOR = 7.69, p-value = 0.014).Elevated serum ALAT was predicted by serologic evidence of HBsAg (AOR = 7.47, p-value =0.017) and anti- HCV (OR = 4.93, p-value = <0.0001).

Conclusion: Among people who use the drug, HCV is still higher while HBV tends to increase. Through harm reduction prevalence of HBV and HCV may be reduced.

67

Strategic Screening and Linkage to Care for Hepatitis B Among Pregnant Women in Nigeria: Hospital-Based Study

Tiwah John O[1]
[1]*Department of Research, Center For Initiative And Development In Taraba, Jalingo, Nigeria*

Background: Preventing perinatal HBV transmission is identified as one of the most important part of the national strategy to eliminate hepatitis B. It has been estimated that over 19 million Nigerians living with viral Hepatitis B are unaware of their status, due to barriers such as low awareness, stigma and out-of-pocket expenses in hepatitis care.
Objective: To determine the prevalence of the hepatitis B viral (HBV) infection and hepatitis B e antigen (HBeAg) positivity among pregnant women attending antenatal clinics in Three hospitals in Nigeria.

Methods: This was a Cross-sectional observational study conducted in three hospitals across three states of Nigeria (Nasarawa, Taraba and Kano). Consent was obtained from Pregnant women attending ANC in the target hospitals. Blood samples and test were carried out in-line with the WHO guideline. Frequencies and binary logistic regression were used with the help of IBM SPSS version 25.

Results: In total, 805 pregnant women were enrolled. Overall, a prevalence of 55/805 (6.8%) was recorded across the three states. State based prevalence of HBV across these states were 9.5%, 7% and 6.3% in Kano, Nasarawa and Taraba respectively. Before commencement of treatment

with tenofovir prophylaxis, all the 55 pregnant women tested positive to HBsAg were subjected to HBeAg screening, however, 5 of these pregnant women withdrew consent for personal reasons. Result further shows that 15/805 (1.86%) were HBeAg positive across the target states. Result from Binary logistic regression identified factors like; permission/approval by husbands/caregivers, distance to facilities and cost of medication as key factors among others.

Conclusions: In this study, one in fifteen pregnant women attending antenatal care in the three study hospitals has evidence of hepatitis B infection. The study further revealed higher chance of HBeAg positive among HBsAg positive mothers and may be at increased risk of transmitting hepatitis B infection to their unborn babies. We therefore suggest that all pregnant women attending antenatal care should be tested for HBV infection; exposed babies need to receive HBV vaccines within 24 hours of birth.

68

Epidemiological Burden of Hbv Infection Among Military Personnel in Khartoum State

Sulimam A[1]
[1]*public health and emergencies admin., Omdurman, Sudan*

Background: Viral hepatitis has been identified as the seventh leading cause of mortality worldwide. In 2015 an estimated 1.34 million deaths in the world is due to viral hepatitis, approximately half (47%) are related to hepatitis B virus (HBV). The WHO classified Sudan among the highest-burden countries for hepatitis B virus infection (>8%). Living in military camps and being at a greater risk for injury and hospitalization results in a higher risk of HBV infection acquisition among military personnel. Sudan has launched the first national strategic plan on viral hepatitis from 2019 – 2025. The aim of this study is to assess the epidemiological burden of HBV infection among military personnel to help in the implementation of the national strategic plan.

Methods: A sample of 770 military personnel was selected by stratified cluster sampling. Seroepidemiologic and questionnaire survey tools have been used to collect the data, and SPSS was used for analysis.

Results: A seroepidemiologic survey was conducted among 770 active military personnel working in four areas in Khartoum State. More of them are male (91%), and only (9%) are female. The majority age group is 18 -30 years (46.5%), and (34.8%) of the group is 31 – 45 years. The seroprevalence HBsAg among military personnel was 8.9%. The study indicated an association between the age 31-45 years and HBV infection P>0.05, and between the deployment duration and HBV infection P>0.05. The study showed a low awareness about the disease (35%), mode of transmission (43%), and taking treatment (23%).

Conclusion: HBV infection among military personnel was high and the main risk factors the age, education, and longer deployment duration. Poor disease awareness and delays in treatment increase the disease burden. Screening surveys, treatment with regular follow-up visits, health education, and vaccination program are needed to prevent the disease infection.

69

Knowledge of Hepatitis B Viral Infection, Stigmatizing Attitude and Health Seeking Behaviour Towards Hepatitis B Viral Vaccination Among Taraba State University Students

Tomen Agu E[1], Tomen Agu E[2], Tiwah John O[3], Sani Samari M[4]
[1]*Department Of Public Health Science, Taraba State University, Jalingo, Jalingo, Nigeria,* [2]*Dalhatu Araf Specialist Hospital, Department of Family Medicine, Lafia Nasarawa State, Lafia, Nigeria,* [3]*Department of Statistics and Research, Centre For Initiative and Development, Taraba State, Jalingo, Nigeria,* [4]*Department of Medical and Surgical Nursing, College of Nursing and Midwifery, Jalingo Taraba State, Jalingo, Nigeria*

Background: Hepatitis B Virus (HBV) is a highly infectious disease and a major global public health challenge, emerging evidence suggests poor knowledge and stigma are influencing HBV control efforts among university students in Nigeria.

Aim: To assess knowledge, stigmatizing attitude and health seeking behaviour towards HBV vaccination among students in Taraba State University.

Methods: A descriptive cross-sectional survey method was used to assess knowledge, stigmatizing attitude and health-seeking behaviors regarding HBV. The study was carried out at the faculty of health sciences, arts and social sciences Taraba State University Jalingo. The survey involved 233 students from year one to three, Selection was through a stratified simple random sampling and convenient sampling technique. Data was collected via respondents' self-administered structured questionnaire and analysed using SPSS version 20.0.

Results: The university students overall (52.2%) had good HBV knowledge and 49.3% expressed a stigmatizing attitude towards people with HBV. Nevertheless, 71.3% stated they would receive the HBV vaccine if offered, 76.8% would be willing to attend clinic regularly.

Conclusion: Overall Taraba State University Students had good HBV knowledge. However, most students expressed stigmatizing attitude towards people with HBV. Though many expressed interest to receive HBV vaccine and willingness to attend clinic regularly. We therefore recommend improved education about HBV among the university students to increase their knowledge about HBV and stigma reduction to enhance health seeking behavior.

70

Management of Hepatitis B Virus and Treatment Outcomes Among Patients Attending a Selected Clinic in Kenya

Comlan A[2], Kimani J[3], Tuitoek G[4], Ochwoto M[1]
[1]KEMRI, Nairobi, Kenya, [2]Institute of Basic Sciences, Technology and Innovation, Pan African University, Nairobi /Juja, Kenya, [3]Department of Biochemistry, Jomo Kenyatta University of Agriculture and Technology, Nairobi/ Juja, Nairobi, [4]Comprehensive Care Centre (CCC), Marigat Subcounty Hospital, Baringo, Marigat , Kenya

Background: Hepatitis B virus (HBV) is associated with chronic hepatitis, cirrhosis and hepatocellular carcinoma. In the process of Viral hepatitis elimination, Kenya rolled out HBV management, however, treatment outcomes has never been evaluated. This study aimed to evaluate the outcome of HBV treatment in a selected health facility in Kenya.

Methods: From 5ml blood sample collected from forty-one randomly selected HBV positive patients attending comprehensive care clinic in Marigat, Baringo County, presence of HBsAg, HbsAb, HbeAg, and HBeAb) were tested. HBV DNA of HBsAg and Polymerase regions were extracted, amplified and sequenced. HBV viral load was done using TaqMan™. The obtained sequences were aligned for phylogenetic trees and mutation analysis. Treatment outcomes were determined based on patient demographics, serological profiling, viral loads and, duration of treatment.

Results: HBsAg was cleared in 2.4% of patients and of the remaining positive, 14.6% tested HBeAb+ and 85.6% HBeAg-. The mean age was 33.59 ± 2.307 with a range of 8-80, females were slightly more than that of males; 56.1%:43.9% respectively. Patients were on Tenofovir Disoproxil Fumarate (TDF) for <1 to 4 years. Viral load of 24.3% qPCR positive ranged from 4.6×104 to 1.04×101 IU/ml with majority having HBeAg negative (85.6%) and HBeAb positive 80.4%. Two genotypes: D (50%) and A (50%) identified showed no significant difference between treatment outcome. One patient (2.4%) had attained a functional cure by developing HBsAb and clearing HBsAg. Majority (75.6%) of active HBsAg had viral suppressed below detection. Putative mutations: rtM129L, rtW153R, rtP237T, rtN238T, and rtN248H were detected in the RT domain whose association to drug resistance remain unknown.

Conclusion: Majority of HBV patient on treatment have suppressed viral loads, HBeAb positivity and one had attained functional cure. None of the patients had developed known TDF resistance and Genotype A and D has no effect on treatment outcome.

71

Lessons From Implementation of National HBV Screening Guidelines Among Persons Initiating ART at AIDS Information Centre, a HIV Clinic in the Surburbs of Kampala

Nagawa E[1], Kavuma D[1], Naigaga M[1]
[1]*Aids Information Center, Kampala, Uganda*

Background: Hepatitis B virus is the leading cause of chronic liver disease among HIV patients with an estimated prevalence of 17% in Uganda. In 2016, the Ministry of Health recommended routine screening for all persons initiating ART for Hepatitis B virus using Hepatitis B Surface Antigen. Monitoring tests that include complete blood count, Liver function tests, viral load and abdominal ultrasound scan were recommended to be done at baseline and six months. Data was reviewed to determine the screening and monitoring rates of Hepatitis B infection among persons initiating ART.

Methods: The study used health data from the laboratory records for the period between January 2020 to December 2022. This was followed by a data review of the electronic medical records of persons initiating ART co-infected with Hepatitis B to analyze data on HBV screening and monitoring. Descriptive statistics and univariate analysis were used to summarize the data in STATA version 14.

Results: Out of 584 persons initiating ART between January 2020 to December 2022, 78% (456) were screened for HBV. OR for persons initiating ART at the facility and screened for Hepatitis B was 1.79 (Cl 1.55, 3.07). While that of those at community hotspots was 0.97 (Cl 0.67, 1.23). The prevalence of HBV screen positive results was 5.3%. Out of 24 persons co-infected with HIV/HBV, 83.3% were monitored using one or two tests at Baseline and 25% at six months. OR for persons that presented with signs and symptoms of liver failure monitored for more than two tests at six months was 2.01 (Cl 1.54, 4.71).

Conclusion: Routine screening for Hepatitis B among persons initiating ART was more feasible at facility. Monitoring was mainly done through clinical assessments, those that presented with signs and symptoms of liver failure were more likely to be monitored for the recommended tests. Adapting the HBV screening and monitoring guidelines in HIV clinics remains a challenge, thus concrete health systems strengthening is needed for the adaptation of these guidelines.

72

Hepatitis B Virus Prevalence and Implications for Mother-To-Child Transmission Among Pregnant Women in Rural Communities of Taraba State - Nigeria

Daniel L[1], Tiwah John1 O[1], Kamlen Adda D[1], E. Agu T[1]
[1]*Center For Initiative And Development, Jalingo, Nigeria*

Background: Globally, most of the burden of chronic hepatitis B infection is attributed to Mother-to-child transmission of HBV at, or shortly after, birth or in early childhood and such perinatal and early-childhood infections lead to high rate of chronicity and mortality. Nigeria is regarded as one of the country that is highly endemic for viral hepatitis B infection and the major route is MTCT.

Objectives: To determine the prevalence of viral hepatitis among pregnant women in Taraba State To determine barriers associated with MTCT of hepatitis B among pregnant women

Methods: This was an interventional study that was carried out by CFID/CCT a local charity/patient group between Jan- December, 2022 in four rural hospitals of Taraba State. A well-structured questionnaire and patients register were used for data collection. All Pregnant women that consented to partake in the study and who are attending Antenatal across the four rural hospitals were enrolled for the study. Data collected were scripted into ODK and analyzed using SPSS version 24. Simple percentage and binary logistic regression analysis were used.

Results: A total of 2375 pregnant women were enrolled for the study out of which 1,675 pregnant women met inclusion criteria. Results from the findings shows that 105/1675 (6.3%) pregnant women were reactive to Hepatitis B. Before before being provided with tenofovir 300mg prophylaxis as recommended by WHO; all the 105 pregnant women tested positive to HBsAg were subjected to HBeAg screening out of which 49/105 (2.9%) were HBeAg positive. Result from Binary logistic regression identified factors like; permission/approval of husbands/caregivers prior to HBsAg screening, religious/traditional beliefs and distance to facilities as key factors to ANC services in the study locations.

Conclusion: This study identified intermediate prevalence of viral hepatitis B among pregnant women, barriers such as distance to Health care facilities, religious/cultural beliefs and Husbands/caregivers approval prior to screening their wives were identified as some of the key factors. There is an urgent need to address the underlying issues identified in this study so as to improve access to HBV PMTCT services among pregnant women living HBV before 2030.

73

Testing and Immunization of Populations at Increased Risk for Hepatitis B Infection in Zambia

Syabbalo E[2,3], Mpisa S[2,3], Vinikoor M[1,2,4], Wamundila M[3], Munalula L[3], Musonda T[3], Phiri R[3], Kelly P[2,3,5], Thio C[6], Duggal P[6], Thomas D[6], Sinkala E[6]

[1]Centre For Infectious Disease Research In Zambia, Lusaka, Zambia, [2]Dept of Medicine, University Teaching Hospital, Lusaka, Zambia, [3]Tropical Gastroenterology and Nutrition Group, UNZA, Lusaka, Zambia, [4]University of Alabama at Birmingham, Birmingham, USA, [5]Queen Mary University of London, London, United Kingdom, [6]Johns Hopkins University, Baltimore, USA

Background: Priority adult populations for hepatitis B virus (HBV) infection testing and immunization need to be defined in Africa. We describe interim results from a combined testing and immunization initiative at a referral hospital in Zambia.

Methods: At University Teaching Hospital in Lusaka, we launched an HBV testing initiative for priority populations, which we defined as health care workers (HCW) and contacts of HBsAg-positive individuals. If individuals self-identified as either group, they received rapid HBsAg finger prick testing. If HBsAg-negative, blood was collected for core (anti-HBc) and surface (anti-HBs) antibodies and participants were then given the option of an immediate dose of HBV vaccine versus waiting on serological results. Those who were HBsAg-negative and had HBsAb <10 mIU/ml were asked to return for 2 additional vaccine doses. We described the numbers tested and their demographic and serological profiles and compared between contacts and HCW.

Results: From October 2022 to May 2023, 286 individuals tested HBsAg-negative, including 172 HCWs and 94 contacts. Median age was 29 years, 112 (39.3%) participants were men, and 25 (8.7%) were living with HIV. Anti-HBc-positivity was present in 45.6% of contacts and 18.8% of HCW (P<0.001), and increased with age (13.4% at 18-29 years, 41.3% at 30-39 years, 60.5% at 40+ years; P<0.001). Anti-HBs-positivity was present in 43.3% of contacts and 29.9% of HCW. At the time of HBV testing, 188 (68.2%) opted for an immediate dose of vaccine. Of 64 individuals who chose to await results prior to immunization, only 4 (6.2%) have returned for the first vaccine dose. Among 192 who received a first vaccine dose, only 9 (4.7%) individuals have thus returned for a second dose.

Conclusion: Concerningly, many HCW in Zambia may lack HBV immunity. Compared to HCW, fewer contacts were tested, but they had higher prevalence of lifetime HBV infection. Immediate vaccination, based on HBsAg-negativity has thus far led to higher vaccine uptake. To close gaps in awareness of HBV status in Zambia, diverse testing strategies, informed by local epidemiology, will be needed.

74

Prevalence of Viral Hepatitis B Among Pregnant Women In Nasarawa State Nigeria

Umaru M[1], Tiwah John O[1]
[1]*Department of Research, Centre for Initiative and Development (CFID) Taraba, Jalingo , Nigeria*

Background: The World Health Organization (WHO) reported that Hepatitis B is a potentially life-threatening liver infection caused by hepatitis B virus (HBV). WHO estimated that 354 million people were living with chronic hepatitis B infection in 2021, with 1.5 million new infections each year. HBV Vertical transmission is reported as one of the commonest modes of transmission in many endemic areas including Nigeria.

Objective: This study sought to determine the prevalence and associated factors of hepatitis B virus among pregnant women in Nasarawa State.

Methods: This was a cross sectional community program that targeted pregnant women attending ante-natal clinic at Dalhatu Araf Specialist hospital, Lafia. Consent was obtained from Pregnant women willing to participate in the study. Structured questionnaires were administered to 223 pregnant women after which blood samples were collected by well-trained lab scientists to test for hepatitis B surface antigen in line with WHO guideline. Frequencies, means, proportions and test for associations were used with the help of IBM SPSS version 25.

Results: A total of 223 pregnant women were enrolled in the study. The mean age was 27.25 ± 5.7 years. Overall, 15(7%) pregnant women were tested positive for HBsAg, Result from this study is higher than the recent study conducted in Nigeria by Babayemi et al. 2021 among same population between 2014 - 2021. Result from odd ratio shows that pregnant women who are younger than 30 years were 1.06 times more reactive to HBsAg than those who are above 30 years (OR=0.669, CI 0.31-1.436).

Conclusion: The seroprevalence of HBV as recorded in this study is slightly high based on WHO classification of endemicity. Age was associated with prevalence of the virus. This study suggests for more interventions during pregnancy in order to register more successes.

75

Knowledge, Attitudes and Practice Towards Hepatitis B Infection Prevention Among Healthcare Workers at Kitwe Teaching Hospital, Kitwe, Zambia

Chengo R[1,2], Daka V[2]
[1]*AAFG, Ndola, Zambia,* [2]*The copperbelt University school of medicine , Ndola, Zambia*

Background: Hepatitis B virus (HBV) infection is a serious public health issue globally. Health care workers (HCWs) are at high risk of contracting HBV infection because of their repeated direct exposure with HBV infected blood and body fluids in their work.

Objective: Thus, the objective of this study was to assess Knowledge, attitudes and practice towards hepatitis B infection prevention among Health Care Workers at Kitwe Teaching Hospital(KTH), Kitwe, Zambia.

Methods: A descriptive quantitative cross sectional study was conducted among a sample of Healthcare practitioners from Kitwe Teaching Hospital. The data was collected using a well-structured self-administered questionnaire, then coded and analysed using descriptive and inferential statistics.

Results: A total of 340 Health Care workers(HCWs) from different professionals participated in this study. 153 (45%) of the participants were males and 187 (55%) were females. Majority of the participants had overall good knowledge (94.7%,), favourable attitude (76.5%) but poor practice (49.4%), towards HBV infection prevention. A significant proportion of health care workers 267(78.5%) were not vaccinated against hepatitis B virus. Furthermore, the study showed that the age of a health practitioner and level of education were significant predictors of practice levels among Health care workers. In this study, the relationship between levels of knowledge,

attitudes and practice was examined among HCWs.

Conclusion: The study findings revealed that most of the health care professionals at Kitwe Teaching Hospital have good knowledge, favourable attitude, and poor practice towards HBV infection prevention These findings suggest that there is need for sustained health education and awareness campaigns about HBV infection prevention among health care workers regardless of level of education and age of a healthcare worker.
Keywords: Hepatitis B infection prevention, Kitwe, health care worker and

76

Impact of Fibroscan® Results on Management of Chronic Hepatitis B in Clinical Practice, a Libyan Experience

Bousifi N[1], shwehdi M[2], Alraid M[1]
[1]Attasami Diagnostic services, Tripoli, Libya, [2]Central hospital of Tripoli, Tripoli, Libya

Background: Until few years back liver biopsy was the gall standard in the decision of treatment of chronic hepatitis B, later non-invasive methods for evaluation of liver fibrosis have emerged including Fibroscan®. In Libya Fibrotest/actitest, and other simple scores have replaced liver biopsy in evaluating liver fibrosis. Recently Fibroscan® become available, we aimed to evaluate its results in the guidance for treatment decision of chronic hepatitis B.

Methods: We included subsequent hepatitis B patients who were evaluated with Fibroscan® compact 530 for degree of fibrosis and steatosis at Attasami private clinic, from January 2021 to March 2022

Results: A total of 119 patients were transferred from different clinics for evaluation of fibrosis for the decision of starting treatment, mean age was 45 years, 84(70.5%) were males. Fibrosis stage F0-F1 was found in 71patients (60%), of these patients, duration of hepatitis B was not known in 25(35%), 22(31%) were newly diagnosed, 7(9%) were less than 10 years of disease duration, and 17(24%) were diagnosed more than 10 years, fibrosis stage of F1-F2 was found in 11 patients (9%), fibrosis stage F2-F3 in 15 patients (13%), ≥ F3 in 22 patients (18%). Steatosis was absent in 69(58%) patients, and 50(42%) patients have steatosis at different stages; stage 1 in 13(26%), stage 2 in 16(32%), stage 3 in 21(42%). Steatosis was associated with fibrosis score of F0-F1 in 27/50 patients (54%). Alanine transferase (ALT) was elevated in 12 patients (10%), 5 were started treatment of hepatitis B, 1 diagnosed as acute hepatitis B, 3 steatohepatitis, 2 autoimmune liver diseases, and 1 diagnosed as hepatocellular carcinoma

Conclusion: The quantification of liver fibrosis is a key factor for hepatitis B treatment decision, Fibroscan® appears to be a valuable non-invasive tool to manage patients with chronic hepatitis B in clinical practice. the presence of high liver function with absence of fibrosis may indicate steatohepatitis or other liver diseases.

77

Prevalence of Hepatitis C Virus Antibodies Among Blood Donors Attending a Tertiary Health Facility in Lagos, Nigeria: A Pilot

Ashaka O[1], Popoola B[1]
[1]Department of Biological Sciences and Biotechnology, Caleb University, Imota, Lagos, Nigeria, Lagos, Nigeria

Hepatitis C Virus is a blood-borne infection that causes liver disease, it is the major cause of chronic liver cancer and the virus can be transmitted through contact with infected blood or through sexual contact with a infected person. Recipients of donated blood constitutes a source through which individuals may be infected with HCV. In Nigeria, it is estimated that about 3.5 million people are living with HCV. This study was carried out to evaluate the prevalence of hepatitis C virus antibodies among apparently healthy people who comes to donate blood at a tertiary health facility in Lagos, Nigeria.

A purposive sampling method is used to select 91 individuals who consented to this study. Questionnaires were administered in this study to obtain information on socio-demographic data and risk factors associated with the detection of Hepatitis C antibody. Blood specimen were collected in tubes with EDTA anticoagulant and plasma was extracted for hepatitis C antibody using Enzyme-Linked Immunosorbent Assay (ELISA) technique. Out of the 91 participants, 39 persons were positive with a prevalence of 42.9%. The prevalence of anti-HCV was higher among females with a prevalence of 66.7% (4/6) when compared to the males with a prevalence of 41.2% (35/85) although there were more male participants that females in this study. The highest prevalence was observed among age groups 25-29 years with a prevalence of 56.5% when compared to age groups 50-54 and 55-59 years with a prevalence of 33.3% (1/3). The predisposing factors that were associated with possible transmission of HCV in this study were participation in risk associated behaviors such as genital circumcision, needle sharing, sexual intercourse and toothbrush sharing.

The prevalence of HCV in this pilot study is high and alarming. The young adult population that are actively involved in blood donation have HCV antibodies in their blood. This is evidence that they have been exposed to the virus. This study did not screen for HCV RNA which could have been evidence of current infection.

78

Exploring Hepatitis B and C Transmission Routes in the Context of Hyperendemicity

Moussavou-Boundzanga P[1], Itoudi Bignoumba P[3], Bivigou-Mboumba B[2], Biloghe Akomezoghe H[3], Mouinga Ondeme A[2], Moussavou Kombila J[3], Pineau P[4]

[1]Université Sciences et Techniques de Masuku, Franceville, Gabon, [2]Centre Interdisciplinaire de Recherches Médicales de Franceville, Franceville, Gabon, [3]Centre Hospitalier Universitaire de Libreville , Libreville , Gabon, [4]Institut Pasteur, Paris, France

WHO estimates 1.5 million new chronic hepatitis B (HBV) infections. Although the virus is transmitted through contact with infected body fluids, a clear understanding of the routes has yet to be demonstrated. Moreover, several studies showed a predominance of HBV in men and hepatitis C (HCV) in women, suggesting gender-specific modes of contamination. In this context, we have set up this study to investigate specific contamination factors associated with a risk of infection by these viruses in Gabon.

We conducted a case-control study of 85 (HBV /HCV) cases and 85 control. We administered a questionnaire to participants to compare their socio-demographic characteristics, lifestyle habits, and medical history. The case population had a sex ratio of 2.03. Patients ranged in age from 19 to 78 years, with an average age of 46.7±12.3 years. The prevalence of HBV, HCV, and HDV were 80%, 21.2%, and 7.1%, respectively. Men were more commonly diagnosed with HBV (sex ratio 3) at younger ages (40.4 ±10.9). On the contrary, women were more infected by HCV (sex ratio 0.34) at older ages (45.2 ±39.5).

Analysis of health habits suggests that HBV/HCV infection would be associated with having taken traditional drug treatments (p=2.78 E-6; OR=6.35), having had a sexually transmitted disease in the past (p=0.0004; OR=3.46), and having undergone digestive endoscopies (p=0.003; OR= 3.16). In addition, patients with a parent infected with viral HBV had a higher risk of developing viral hepatitis (p= 0.004; OR= 4.53).
Four habits related to sexual behavior were statistically associated with infection. These were unprotected intercourse (p= 2.83 E-8; OR= 7.09), oral (p= 1.11 E-6; OR= 5.29) and anal (p= 0.0002; OR= 5.22) sex, and intercourse during the menstrual period (p= 0.003; OR= 2.5281). Regarding aesthetic habits, scratches after hairdressing among men and piercings among women increase the risk of viral hepatitis. However, using a new crowbar is a protective factor for women (OR=0.18).

Results suggest infection with HBV/HCV/HDV occurs late in life. Contrary to all expectations, this infection is associated with sexuality and aesthetic habits. A prospective study conducted in beauty salons to assess the risk of transmission is needed.

79

The Crosstalk Between Directly Acting Antivirals and Chronic Hcv Patients With Different Stages of Renal Affection: A Multicenter Egyptian Study

El-Kassas M[1], Al Balakosy A[2], Elbadry M[1], Mohamed O[2], Anwar C[2], Abd Algaber M[3], Micheal T[2], El Tahan A[4], Alboraie M[5], Maleak G[2], Tahoon M[6], Sherief A[2], Raafat K[2], Radwan H[7], Eysa B[8], Abdelaziz H[2], Abd El Latif Y[2], Awad A[9]
[1]Faculty of Medicine, Helwan University, Cairo, Egypt, [2]Ain Shams University, Cairo, Egypt, [3]Police Authority Hospitals, Giza, Egypt, [4]New Cairo Viral Hepatitis, Cairo, Egypt, [5]Al-Azhar University, Cairo, Egypt, [6]National Liver Institute, Menoufia University, Shebin El Kom, Egypt, [7]National Research center, Cairo, Egypt, [8]National Hepatology and Tropical Medicine Research Institute, Cairo, Egypt, [9]Faculty of Medicine, Cairo University, Cairo, Egypt

Background: The approval of different direct-acting antivirals (DAAs) improved the clinical outcomes in patients infected with HCV worldwide and could be used in patients with chronic kidney disease (CKD).

Aim: We aimed to assess the efficacy and safety of different DAAs regimens in HCV patients with various estimated glomerular filtration rates (eGFR).
Methods: This retrospective study was conducted at two specialized viral hepatitis treatment centers in Egypt. Patients were classified according to their eGFR into five groups (>90 ml/min, 60-89ml/min, 45-59ml/min, 30-44ml/min, 15-29 ml/min & <15ml/min). Sustained virologic response (SVR) 12 weeks after treatment was evaluated in all groups, in addition to reporting treatment side effects.
Results: The study included 6548 patients (age; 50.9±11.5 years, 50.3% males). Most involved patients (85.5% n = 5596) were treatment-naïve, and 17.0% (n = 1114) had liver cirrhosis. Different DAAs regimens were used, while most of the patients (n= 3586) received Sofosbuvir (SOF) and daclatasvir (DOC) ±RBV. SVR rates were 99.1%, 99.3%, 99.7%, 100%, 100%, & 92.5% in eGFR (>90 ml/min, 60-89ml/min, 45-59ml/min, 30-44ml/min, 15-29 ml/min & <15ml/min), respectively. Patients with eGFR< 15 ml/min had the lowest SVR, which was statistically significant compared to other groups, while patients with eGFR< 30 ml/min had a higher risk of adverse events than patients with eGFR>30.

Conclusion: Different DAAs regimens are highly effective and safe for treating chronic HCV patients with different kidney functions and/or impairment stages. Advanced kidney disease can impair the response to DAAs and increase the incidence of side effects.

80

Epidemiology and Distribution of Genotypes of Hepatitis C Virus in Mogadishu, Somalia

Hassan-Kadle M[1,2]
[1]Abrar University, Mogadishu, Somalia, [2]SomGastro Clinic, Mogadishu, Somalia

Background: The hepatitis C virus (HCV) can cause liver cirrhosis, malignancy, and liver failure by infecting the liver both acutely and chronically. The prevalence of genotype distribution and the genetic diversity of HCV are highly variable globally and are defined by geographical differences. Detection of HCV infection and identification of HCV genotype is very important for HCV treatment because different genotypes of HCV respond differently to antiviral therapy. In Somalia, liver cancer is the second most prevalent type of cancer in men, however the data on the HCV infections are limited and unknown information about HCV genotype occurrence in this country. Thus, this study was evaluated of HCV infection and to observe genotypic distribution of the virus in this tertiary care hospital in Mogadishu, Somalia.

Methods: This study was carried out in Mogadishu's tertiary care hospital between 2015 and 2019. The Anti-HCV seropositivity was investigated in participants who applied to the hospital using an Architect anti-HCV immunoassay. Tests of HCV-RNA and genotyping determinations were performed in two different accredited external laboratories located in Turkey.

Results: The study reported results for 102,601 individual samples out of a total of 115,659 tests, and anti-HCV seropositivity were found for 1,447 different patients. A subgroup of the study population, 20/7,789 healthy individuals, had a seropositivity rate of 0.26%. Additionally,

seropositivity was found in 0.26 % (55/20,784) of individuals under the age of 20 and 6.2% (424/6,837) of individuals above the age of 70. The prevalence of seropositivity was also significantly higher in men than in women (1.64% vs. 1.15%; p0.0001). The HCV genotype analysis indicated that HCV genotype 4 dominates in this study (49.3%), where followed by Genotype 3 (31.5%), Genotype 1b (10.96%), Genotype 1a (5.48%), Genotype 52 (2.7%) and Genotype 2 was not found. Mixed genotypes (Genotypes 3 and 4) were detected in two patients.

Conclusions: This is the most thorough epidemiological study conducted in Somalia since HCV was identified, and it is also the first study to evaluate HCV genotypes among Somali's. We believe that the information offered here will contribute in developing preventative health policies.

81

The Hepatitis C Cascade of Care in People Who Inject Drugs in Dar ES Salaam, Tanzania

RWEGASHA J[1]
[1]*MUHIMBILI NATIONAL HOSPITAL (MNH), ILALA, Tanzania, United Republic of*

Background: The World Health Organisation has recently called for hepatitis C virus (HCV) elimination and has identified people who inject drugs (PWID) as a key population to scale-up screening and linkage to care. This study reports the cascade of care for HCV in PWID attending the largest opioid substitution treatment (OST) clinic in Dar-es-Salaam, Tanzania.

Methods: Between February 2011 and March 2016, HCV serology for all PWID registered at the Muhimbili National Hospital OST clinic, Dar-es-Salaam were obtained from records. In 2015, consecutive HCV-seropositive PWID were invited to undergo a clinical evaluation including epidemiological questionnaire, liver stiffness measurement (Fibroscan) and virological analysis (HCV RNA viral load and genotyping).

Results: During the study period, 1350 persons registered at the OST clinic: all had a HCV serology including 409 (30%) positive results. Among the HCV-seropositive individuals, 207 (51%) were active attenders and 153 (37%) were enrolled for clinical assessment: 141 (92%) were male, median age: 38 years (IQR 34-41),and 65 (44%) were co-infected with HIV; 116 patients (76%) had detectable HCV RNA, with genotypes1a (68%) and 4a (32%); 21 (17%) had clinically significant fibrosis (≥F2) and 6 (5%) had cirrhosis (F4). None were offered HCV treatment.

Conclusion: Chronic hepatitis C among PWID enrolled in the OST centre in Dar-es-Salaam is frequent, but its continuum of care is insufficient; integration of HCV diagnosis and treatment should form a part of OST intervention in PWID in Tanzania.

82

Have a Heart, Save My Liver! Why Hepatitis C Virus Care Remains Inaccessible

Dountio Ofimboudem J[1], Pereira e Silva Gaspa S
[1]*Treatment Action Group, NYC, United States*

Despite being curable with all-oral pangenotypic direct-acting antivirals (DAAs), the hepatitis C virus (HCV) treatment remains out of reach for many in Africa due to lack of political leadership and low implementation of diagnostics and treatment simplification.

We conducted an online data collection survey among community members and HCV policy health advocates in 20 African countries from January to May 2023. Survey participants were asked questions on some of the key diagnostics and policy barriers to HCV care, including the number of clinic visits required to diagnose HCV, decentralization of diagnostic services, availability, and implementation of policies to prioritize HCV. We recognize the limitations of crowdsourced data, and the reliance on countries in which we had contacts only. However, the findings from this survey can help policy makers and care providers improve HCV care on the continent by decentralizing care and implementing WHO Updated recommendations.

With respect to HCV diagnostics, 55% of the countries surveyed require 2 or more clinic visits to obtain a confirmatory HCV diagnosis, and 60% of countries provide all the required HCV diagnostic services in a single facility. Furthermore, in 45% of the countries surveyed HCV diagnostic services are only available in tertiary-level health facilities and genotype testing is still required in 30% of the countries.

With respect to HCV policy only 20% of the countries surveyed have some form of political leadership in viral hepatitis, 50% integrate HCV care with sexual health programs and only 35% integrate HCV care with harm reduction programs. 55% of the countries surveyed provide training programs on HCV care to health care workers, and only 45% of the countries have public awareness campaigns on HCV.

Based on the survey, simplifying the diagnostic and treatment algorithm as recommended by the WHO would improve patient retention to care, expand treatment access, and prevent further transmission. There was 75% rate of HCV care integration with HIV care in countries which is a positive indication that should be replicated in sexual health programs, harm reduction programs and prison health care programs.

83

Screening and Treatment Opportunity Project for Hepatitis C (STOP Hep C) for HCV Elimination in Ghana: Progress on Initial Project Milestones

Nartey Y[1,2], Seake-Kwawu A[3], Awuku Y[4], Agyei-Nkansah A[5], Hiebert L[2], Gupta N[2], Duah A[6], Ward J[2], Roberts L[7]

[1]Cape Coast Teaching Hospital, Cape Coast, Ghana, [2]Coalition for Global Hepatitis Elimination, , USA, [3]National Viral Hepatitis Control Programme of Ghana, , Ghana, [4]University of Health and Allied Sciences, , Ghana, [5]University of Ghana Medical Center, Accra, Ghana, [6]University of Ghana Medical School, Accra, Ghana, [7]Mayo Clinic Rochester, , USA

Background: Access to affordable Hepatitis C treatment remains limited in low- and middle-income countries including Ghana, where HCV antibody prevalence is 3.0%. Following the pledge from Egypt to provide HCV treatment for one million Africans, the National Viral Hepatitis Control Programme of Ghana initiated the Screening and Treatment Opportunity Project for HCV (STOP Hep C). The project goal is to treat 50,000 HCV-infected Ghanaians with direct-acting antiviral (DAA) Sofosbuvir-Daclatasvir, donated from Egypt. Furthermore, it aims to improve hepatitis reporting systems, review the existing 2014 hepatitis policy, and transition to a budget-based long-term elimination plan.

Key milestones and progress: The project was initiated in March 2023 following a formal launch and donation ceremony. In partnership with hepatitis-related civil society organizations (CSOs), a social media campaign helped publicize the project to the general population. Training of 19 case management teams (comprising a doctor, nurse, laboratorian, pharmacist, and data manager) in 5 teaching and 13 regional hospitals across Ghana was conducted by local experts. One district hospital was included as a pilot site to determine feasibility of expanding care to district hospital setting. Project registers were developed to improve hepatitis reporting including for key data points such as prevalence of viremia, liver fibrosis and cirrhosis. Modeling to determine funding needed to achieve elimination using point of care and/or centralized testing were developed. To date, 258 patients have been enrolled in care, of which 207 have begun DAA therapy. At district hospital level, patient treatment is feasible and successful with remote guidance from a hepatologist. Early challenges include high cost of HCV viral load, which remains a significant barrier to treatment initiation, despite advocacy for reduced pricing by CSOs in Ghana.

Next steps: These include evaluation of clinical outcomes, care retention and patient satisfaction. Furthermore, engagement of industry partners for affordable viral load pricing and long-term sustainability planning are underway.

Conclusion: A concerted effort and decentralized approach are required to advance HCV elimination in LMICs. Ghana's STOP Hep C project may serve as a roadmap for resource-limited countries with similar HCV burden and health-system infrastructure to achieve HCV elimination in a timely manner.

84

Treatment of Chronic Hepatitis C in Ethiopia: A Prospective Cohort Study

Mengistie Y[1], Shume P[1], Delil M[1], Abera H[1], Desalegn H[1]
[1]St. Paul's Hospital Millenium Medical College, Addis Ababa, Ethiopia

Background: Direct acting antiviral treatment has changed the paradigm of hepatitis c treatment leading to high rate of sustained viral response. This study assessed treatment outcome of Ethiopian patients treated with direct acting antiviral treatment.
Objectives: The goal of this study was to describe the characteristics of patients with chronic hepatitis C and assess the Sustained Virologic Response (SVR) rate to the Direct Acting Antiviral (DAA) regimen.

Methods: This is a prospective cohort study, which has included eighty-seven consecutive patients treated with sofosbuvir plus Daclatasvir from August 2018 to July 2019. Data was analyzed by using statistical package for social sciences version 23. A Chi-square (χ2) test was used to test for the significance of association, p-value of less than 0.05 was considered as significant.

Results: From eighty-seven patients completed the treatment and follow up as per protocol, fifty-six (64.4%) were females, mean age was 48± 13. Fifty-two (59.8%) were non-cirrhotic, and thirty-five patients (40.5%) were cirrhotic. Genotype 4 was the most common genotype found in 46 (52.9%) patients. Overall sustained viral response as defined by undetectable viral RNA twelve weeks after completion of treatment is 80.5%, and evidence of cirrhosis on ultrasound, aspartate aminotransferase to platelet ratio index (APRI) score ≥ 2 and serum albumin <3.5g/dl were associated with treatment failure (defined by detectable viral RNA 12 weeks after completion of treatment). The mean baseline alanine transaminase and aspartate transaminases were 56.07
and 63.56 respectively and dropped to 25.04 and 30.9 twelve weeks after treatment completion.

Conclusion: Genotype 4 is the most common genotype and sustained viral response is lower than reported in clinical trial. There is improvement in liver transaminase with direct acting antiviral
treatment.

85

Potential Factors Driving HCV Transmission in North Central Nigeria: A Qualitative Assessment in Nasarawa State

Agwuocha C[1], Adisa O[1], Nwobi O[1], Ikpeazu I[1], Boeke C[2], Azania A[2], Chan Y[2], Adamu I[3], Yahaya Ahmed A[3], Adabe R[3], Kama J[1], Fernandes O[2], Lufadeju F[1], Wiwa O[1]
[1]Clinton Health Access Initiative, Maitama, Nigeria, [2]Clinton Health Access Initiative, , United States of Nigeria, [3]Nasarawa State Ministry of Health, Lafia, Nigeria

Background: Hepatitis C Virus (HCV) infection is a global health concern, with an estimated 58 million affected individuals. Transmission occurs through unsafe practices such as needles and sharps sharing, unscreened blood transfusion, circumcision, and injecting drugs. Understanding the key drivers of HCV infection in high-burden areas is crucial for targeted prevention strategies. Nasarawa State in North-central Nigeria has a particularly high burden of HCV, with seropositive rates across the general population (13.2%) and people coinfected with HIV/HCV (14%) exceeding the national average (1.1%) in both cohorts. This abstract presents findings from a formative assessment with local leaders and stakeholders in Nasarawa to identify practices that may be driving the high HCV burden in Nasarawa State.

Methods: A formative assessment was conducted amongst 35 key informants from diverse stakeholder groups – medical professionals, community leaders, and administrative heads – and across the three geopolitical regions in Nasarawa State. Trained interviewers asked 19 semi-structured open-ended questions about perceptions of risk factors and care-seeking behaviour in the community. Results were recorded using an electronic tablet and responses were analyzed using descriptive characteristics (percentages).

Results: Of 35 key informants, 78% were male and 22% were female. 92% had tertiary education or higher, 4% secondary, and 2% primary education. Many participants noted high transmission at the community level (80% of participants). Key community practices perceived as transmission drivers included sharps use (by local beauticians) (39%), unsafe sexual practices (25%), and blood transfusion (14%). There was a common perception of transmission occurring through circumcision (65%), uvulectomies (82%), and scarification (45%) performed through local barbers, beauticians, and street workers. A significant number of community members perceived that practices by these local street workers may be actively driving HCV transmission with 74% patronizing their services.

Conclusion: Local practices such as sharing of sharps in local circumcision, uvulectomies, scarification and manicure by local street workers including barbers and beauticians are perceived to contribute to HCV transmission. These findings will guide a study among patients on risk factors associated with HCV positivity and may provide insights on areas to target for HCV prevention.

86

Hepatitis C Virus Infection in Rural Eastern Uganda - 12 Year Follow Up and Feasibility of DAA Treatment

Kimono B[1], Lumley S[2,3], Mugisha J[1], O'Hara G[4], Wekesa C[5], Asiki G[6], Kamali A[1], Mgomella G[7], Ssengendo B[1], Waddillove E[8], Ndungutse R[1], Kwizera Mbonye M[1], Thomson E[9], Ocama P[5], Matthews^ P[8,10,11], Newton^ R[1]

[1]MRC/UVRI/LSHTM Uganda Research Unit, , Uganda, [2]Peter Medawar Building for Pathogen Research, Nuffield Department of Medicine, University of Oxford, Oxford, United Kingdom, [3]Department of Infectious Diseases and Microbiology, Oxford University Hospitals NHS Foundation Trust, Oxford, United Kingdom, [4]London School of Hygiene and Tropical Medicine, London, United Kingdom, [5]Makerere University College of Health Sciences in Kampala, , Uganda, [6]African Population and Health Research Centre, , Kenya, [7]Centers for Disease Control and Prevention, , , [8]The Francis Crick Institute, London, United Kingdom, [9]MRC Centre for Virus Research, , Glasgow, [10]Division of Infection and Immunity, University College London, London, United Kingdom, [11]Department of Infection, University College London Hospitals, London, United Kingdom

Background: Oral direct acting antiviral (DAA) treatment for HCV infection is safe, well-tolerated and has high cure rates with sustained virological response (SVR) of >98%. However, due to high cost and difficulties in procurement, access to DAA has been challenging in many settings in WHO Africa. We here report outcomes for adults diagnosed with HCV infection in rural Uganda.

Methods: In 2011, screening for HCV, HIV and HBV was offered to 6054 participants in the Kyamulibwa Uganda General Population cohort (GPC) in Kalungu District. Thirteen individuals (0.2%) had active HCV infection (positive HCV antibody and HCV RNA, all genotype 4), of whom 8 were migrants from Rwanda. In 2017, treatment with a daily fixed-dose combination of LED-SOF (ledipasvir (90 mg)/sofosbuvir (400 mg)) for 12 weeks was offered to seven surviving individuals. Demographic and biochemical tests were performed prior to treatment, viral load was repeated at 24 weeks, and transient elastography (Fibroscan, Echosens, Paris) performed at that time and again in 2023. Ethical approval for each round of the GPC was granted by the UVRI Research and Ethics Committee (GC/127/710) and the Uganda National Council for Science and Technology (SS 4981).

Results: Six males and one female were treated for HCV, median age 70 years (IQR 58-74). One individual was coinfected with HIV, no HBV coinfection was seen. At baseline all liver function tests were within the normal range and median transient elastography score was 6.0kPa (IQR 5.0-10.0). SVR was confirmed at 24 weeks post-treatment in all individuals. Elastography was repeated in five individuals in 2023, median 6.5kPa (IQR 4.7 - 6.8).

Conclusion: In this small East African cohort, 6/13 adults with HCV infection had died before receiving treatment. For the other seven, we were able to provide successful DAA treatment with a fixed dose combination of LED-SOF (despite a rural setting and resource constraints). Although HCV infection is low prevalence, treatment is feasible and successful, and advocacy is needed to enhance equitable access to diagnosis and curative therapy.

87

Hepatitis B Translational Science Cohort in Zambia: Addressing Fundamental Questions Related to HBV in Africa and Effects of HIV Coinfection

Musonda T[2], Sinkala E[2,4], Kanunga A[1,2], Wallace M[7], Patel H[7], Mwakamui S[2], Nsokolo B[2,5], Lauer G[7], Chung R[7], Timm J[6], Walker A[6], Wandeler G[8], Bhattacharya D[9], Alatrackchi N[7], Kelly P[2,10], Vinikoor M[1,3,4]

[1]Centre For Infectious Disease Research In Zambia, Lusaka, Zambia, [2]University of Zambia, Lusaka, Zambia, [3]University of Alabama at Birmingham, Birmingham, USA, [4]University Teaching Hospital, Lusaka, Zambia, [5]Levy Mwanawasa University Teaching Hospital, Lusaka, Zambia, [6]University Hospital Dusseldorf, Dusseldorf, Germany, [7]Massachusetts General Hospital, Boston, USA, [8]University of Bern, Bern, Switzerland, [9]University of California at Los Angeles, Los Angeles, USA, [10]Queen Mary University of London, London, United Kingdom

Background: We report early findings from a translational science HBV observational cohort in Zambia.

Methods: Adults who were HBsAg-positive in Lusaka enrolled if they had <=7 days of antiviral therapy and either HIV coinfection, eligibility for antiviral therapy for chronic HBV monoinfection (CHB), or had acute HBV (AHB). Exclusion criteria were pregnancy, decompensated cirrhosis, or HCV. At enrollment, a large blood volume was collected to measure HBV viral and liver parameters, and to study rare HBV-specific T and B cells. HBV viral sequencing was performed with Nanopore platform. After safety check, liver fine needle aspiration (FNA) was performed percutaneously, with cells then loaded in a Seq-well array, to permit single cell RNA sequencing at a distant collaborating lab. At 12 months, baseline procedures were repeated including liver FNA. At follow-up visits, ALT flares and HBsAg loss prompted unscheduled visits to collect additional blood for analysis. We now describe initial results and participant acceptability.

Results: From October-2020 to March-2023, 146 individuals enrolled (82-HBV/HIV, 49-CHB, 15-AHB). The median age was 36 years and 60% were male. Median CD4 count in coinfection was 200 cells/mm3. Two HBV genotypes were equally represented (A1 and E). At enrollment, blood draws of 180 ml routinely yielded >100 million peripheral blood mononuclear cells. Pre-FNA safety (INR, platelets, ultrasound) parameters were met in ~90%, and to date, >100 enrollment and >40 repeat liver FNAs have been performed. Three participants (all with HIV) were diagnosed with hepatocellular carcinoma. Overall satisfaction with the clinical care afforded by the cohort made large volume blood draws and the short-lived pain and anxiety of liver FNA acceptable to participants. Single cell RNA sequencing of initial FNAs yielded the expected types of immune cells, as well as hepatocytes and hepatic stellate cells. Preliminary analysis linked HIV coinfection with increased expression of interferon-stimulated genes and neutrophil PD-1/PD-L1.

Conclusion: A prospective cohort in Zambia demonstrated the feasibility of enrolling and retaining people with chronic HBV infection in an intensive translational science study. Recent innovations like Seq-well and Nanopore can empower researchers in Africa to incorporate modern technologies in their work locally.

88

Seroprevalence of Hepatitis B Virus Infection, Anti-HCV Antibodies and HIV and Knowledge Among People Who Use Drugs Attending Methadone Therapy Clinic in Tanzania; A Cross-Sectional Study

Kilonzo S[1]

[1]CATHOLIC UNIVERSITY OF HEALTH AND ALLIED SCIENCES, MWANZA, Tanzania, United Republic of

Background: Methadone therapy clinics have been recently introduced in Tanzania, aiming at reducing risk-behaviors and infection rates of viral hepatitis and HIV among people who use drugs. The objective of this study was to estimate the prevalence, associated factors and knowledge level of these conditions among people who use drugs attending a methadone clinic in Tanzania.

Methods: We enrolled 253 People who using drugs receiving Methadone therapy. Clinical data was retrospectively collected from the medical records and face-to face interviews were conducted to determine the behavioral risk factors and respondents' knowledge on viral hepatitis and HIV.

Results: An overall sero-prevalence of viral hepatitis (either hepatitis B surface antigen or anti-hepatitis C virus) was6.3%, while that of hepatitis B virus mono infection was 3.5% and anti-hepatitis C antibodies was 3.5%.Seroprevalence of HIV was 12.6%. Viral hepatitis was strongly predicted by advanced age (> 35 years) ($p = 0.02$) and staying at Kirumba area ($p = 0.004$), and HIV infection was predicted by increased age (> 37 years) ($p = 0.04$) and female sex ($p < 0.001$). Regarding the knowledge of viral hepatitis, majority of the respondents were unaware of the transmission methods and availability of hepatitis B virus vaccines and only 17% were classified as well informed (provided ≥4 correct answers out of 7 questions). Good knowledge was highly predicted by higher education level of the individual ($p = 0.001$).

Conclusion: Despite the efforts to curb viral hepatitis and HIV infections through Methadone clinics, infection rates among people who use drugs are still high and the general knowledge on preventive measures is inadequate.

89

Combination Therapies Specifically Designed for Children with Hepatitis Coinfection in Nigeria

Kolawole E[2]
[1]*Federal Medical Center, Jalingo Taraba State, Jalingo, Nigeria,*
[2]*Taraba state University (TSU), Jalingo, Nigeria*

Background: Hepatitis co-infection is a serious health concern for children in Nigeria, where over 20 million people are infected with hepatitis B and C annually. Hepatitis co-infection can lead to liver fibrosis, cirrhosis, and hepatocellular carcinoma, and increase the risk of mortality. Therefore, effective treatment options are urgently needed for this vulnerable population.

Methods: This review evaluates the current combination therapy options for hepatitis co-infections in children in Nigeria, which consist of antiviral medications, immunomodulatory therapy, and liver transplantation. Using the keywords, Data was obtained from PubMed, Embase, and African Journals Online databases for relevant studies published from January 2000 to June 2023. The review discusses the challenges and differences in treating hepatitis co-infections in children compared to adults, such as adjusting medication dosages based on weight/age, monitoring liver function tests more frequently, and using pediatric formulations of antiviral medications.

Results: 12 studies from searches varied in their design, methods, and quality. The most common combination therapy option was antiviral medications plus immunomodulatory therapy, followed by antiviral medications alone, and liver transplantation. The results suggested that combination therapy options may improve the virological response, liver function, and survival of children with hepatitis co-infections, but they also may cause serious adverse events and complications, such as anaemia, infection, rejection, and graft failure. The review also highlights the gaps and limitations in providing effective combination therapy for hepatitis co-infections in children, such as the high cost of treatment, limited availability of pediatric formulations, lack of research evidence, and poor adherence to treatment.

Conclusion: The review concludes by emphasizing the need for further research into the most effective combination therapy options specifically for hepatitis co-infections in children in Nigeria, which could improve their health outcomes and quality of life.
Keywords: hepatitis co-infection, combination therapy, children, Nigeria.

90

Hepatitis B Viral Characteristics in Zambia: Genotypes A1 and E Compared

Nsokolo B[2,3], Walker A[4], Musonda T[3], Sinkala E[3,5], Alatrakchi N[10], Muula G[1], Kelly P[3,6], Kanunga A[1,5], Bhattacharya D[8], Wandeler G[9], Lauer G[10], Chung R[10], Timm J[4], Vinikoor M[1]

[1]Centre For Infectious Disease Research In Zambia, Lusaka, Zambia, [2]Levy Mwanawasa University Teaching Hospital, Lusaka, Zambia, [3]University of Zambia, Lusaka, Zambia, [4]University Hospital Düsseldorf, Düsseldorf, Germany, [5]University Teaching Hospital, Lusaka, Zambia, [6]Queen Mary University of London, London, United Kingdom, [7]University of Alabama at Birmingham, Birmingham, USA, [8]University of California at Los Angeles, Los Angeles, USA, [9]University of Bern, Bern, Switzerland, [10]Massachusetts General Hospital, Boston, USA

Background: Unlike Asia, comparisons of the different hepatitis B viral genotypes circulating in Africa (A1, D, and E) are lacking. In East and Southern Africa, HIV is a common HBV coinfection that may alter the molecular epidemiology and transmission of the virus. We sequenced HBV at enrollment in a cohort in Zambia, and analyzed viral differences by genotype and HIV status.

Methods: We analyzed participants in a clinical cohort that recruited treatment-naïve adults (age 18+ years) with either HBV/HIV coinfection or HBV monoinfection in Lusaka. Participants with coinfection were diagnosed with HBV via enrollment in HIV care. Counterparts with HBV monoinfection were diagnosed through clinically-driven (i.e., signs/symptoms) or routine HBsAg testing. At enrollment, we measured liver transaminases, hepatitis B e antigen (HBeAg), and HBV DNA (plus CD4 count in coinfection). When DNA was >500 IU/ml, we amplified the complete HBV genome in two fragments and sequenced using the Nanopore platform.

Results: Sequencing results from 220 adults were analyzed. Their median age was 33.2 years, 65 (29.5%) were women, 60 (27.3%) had HIV coinfection; in them, median CD4 count was 137 cells/mm3. HBV genotype A1 (gtA) and genotype E (gtE) were equally frequent (105 vs. 115); however, HIV coinfection was more common in participants with gtE than gtA (33.9% vs 20.0%; p=0.02). gtE isolates displayed less phylogenetic clustering and genetic distance than gtA (median patristic distance, 0.019 vs. 0.011; p<0.0001). The stop codon in the pre core region, associated with HBeAg loss, was detected in 42.6% of gtE isolates, but was nearly absent in gtA. In gtE, this HBeAg variant was less frequent in HBV/HIV coinfection compared to HBV monoinfection (38.4% vs. 70.1%; p=0.0014).

Conclusions: In Zambia, two HBV genotypes are circulating. Whereas different gtA isolates were seemingly introduced on multiple occasions and continued to spread through the population, gtE may be the more endemic form of HBV in this region and is still transmitted. HIV and HBV gtE may share transmission networks. Differential presence of HBeAg variants by HIV status may reflect the impact of immunocompromise on viral evolution.

91

Sero-Prevalence and Correlates of Hepatitis B and C Viral Co-infections Among Adult HIV/AIDS Patients Accessing Dangila Health Center, Northwest Ethiopia

Munshea A[1,2], Desta B[1], Nibret E[1,2], RC S[3]

[1]Health Biotechnology Division, Institute of Biotechnology, Bahir Dar University, Ethiopia, Bahir Dar, Ethiopia, [2]Biology Department, Sceince College , Bahir Dar University, Ethiopia, Bahir Dar, Ethiopia, [3]Biotechnology Department, Panjab University, Chandigarh ,India, Chandigarh, India

Worldwide, hepatitis B and C virus(HBV and HCV) infections, are the two most common co-infections with human immunodeficiency virus (HIV) and have been associated with reduced survival and increased risk of hepatotoxicity with antiretroviral therapy (ART) in HIV-infected individuals. Data on the prevalence of HBV and HCV among HIV patients in Ethiopia are quite limited and no study has been carried out in and around Dangila town, northwest Ethiopia. A cross-sectional study was conducted to determine the sero-prevalence of HBV and HCV infections and its associated risk factors among HIV infected adults accessing Dangila Health Centre. Data on sociodemographic, behavioral, practice, and clinical characteristics of the study subjects were gathered using pre-tested semi-structured questionnaire. Serum of each study participant was separated from the blood sample collected and tested for the presence of

HBsAg and Anti HCV antibody using rapid test kits. The data gathered were entered in to a computer and analyzed using statistical package for social sciences (SPSS) version 20. Chi-square and multivariate logistic regression analysis were employed to examine the association between variables and hepatitis virus infection. Odds ratio (OR) and 95% confidence interval (CI) also used as a measure of the strength of association. Of the total 384 adult HIV/AIDS patients participated in the study, 4.4% were tested positive for HBV infection, but none for either anti-HCV antibody or HBV and HCV co-infections. In multivariate analysis, adult HIV patients who had previous history of tooth extraction practice were 3 times more likely of being infected by HBV infection than those without (AOR=3.160, 95% CI=1.065-9.380, p=0.038) and patients who had previous history of STDs were about 4 times more likely of acquiring HBV infection than those who had no previous history of STDs (AOR=3.567, 95% CI=1.119-11.375, p=0.032). The current study revealed an intermediate infection of HBV in HIV/AIDS patients. Routine screening and provision of vaccination service in conjunction with accurate information about risk factors to the HIV/AIDS patients are necessary.

92

HBV & HCV Co-infection in Selected Facilities– Lessons From the Hepatitis Evaluation to Amplify Testing & Treatment(HEAT) Pilot Project in Akwa Ibom & Nasarawa States, Nigeria

Ejeckam C[1], Green K[1], Ejembi J[1], Adesina A[1], Ikpeazu A[2], Ward J[3], Hierbert L[3]
[1]Institute For Global Public Health, University Of Manitoba (nigeria Office), Abuja, Nigeria, [2]National AIDs, STI and Viral Hepatitis Control Programme, Abuja, Nigeria, [3]Coalition for Global Hepatitis Elimination, Decatur, United States of America

Background: Nigeria has the highest burden of viral hepatitis with a national average prevalence of 8.1% for HBV (10.3% in men and 5.8% in women) and 1.1% for HCV (1.3% in men and 1.0% in women). The country has a co-infection rate of 8.9% and 1.1% for HIV/HBV and HIV/HCV among people living with HIV (PLHIV) aged 15-49 years respectively (NAIIS, 2018).
Also, Otegbayo et al, in an earlier study: prevalence of hepatitis B & C seropositivity in a Nigerian Cohort of People Living with AIDs, reported a high prevalence of HBV & HCV. HBV and HCV co-infection rate is a major burden in the national hepatitis elimination response. The HEAT project assessed co-infection rates among regular patients in Akwa-ibom and Nasarawa states using record from laboratory samples.

Methods: A descriptive cross-sectional design in selected health facilities in study states. A non-probability purposive sampling was used to select 129 health facilities providing HBV and HCV testing in the two states. Section A of the questionnaire comprising of health facility biodata, which include name, address, type of facility, service provision, types of hepatitis testing being offered, testing platform, point of entry for HBV and HCV testing, while the Section B obtain information on laboratory operations, e.g. number of tests per day/week/month, integration of hepatitis and HIV services, HBV & HCV co-infections, etc. Data analysis was effected using Microsoft Excel and SPSS vs 22.

Results: Result of analysis shows that there are 26% HBV/HCV co-infections in Akwa-ibom and 62% co-infections in Nasarawa. The consolidated rates for both states shows about 43% co-infections among regular patient's samples in the assessed facility laboratories.

Conclusion: The data has shown the need for a wholistic viral hepatitis treatment interventions in both states. Effort must be geared towards halting the growing double infection amongst patients in Akwa-ibom and Nasarawa, as the National Control Programme targets total elimination of both diseases by 2030.

93

Epidemiology and Prevalence of Hepatitis B and C Among Students of Taraba State University

Govina Aizoboah S[1]
[1]*Center For Initiative And Development, Jalingo , Nigeria*

Background: Viral hepatitis is a major global public health problem. More than 257 million people worldwide are estimated to have hepatitis B and 71 million with hepatitis C infection and over 1.34 million people die each year of the acute and chronic consequences of these disease conditions. Like the HIV/AIDS epidemic, Taraba State has again been rated one of the highest in the country in prevalence of both B and C. In Nigeria, the national prevalence of Hepatitis B and C remains at 12.2% and 2.2% for Hepatitis B and C respectively, while higher prevalence of about 19% and 11% for HBV and HCV has been reported for Taraba State.

Methods: This was a description cross sectional survey conducted in jalingo the state capital during a community outreach and free screening. 300 students of the Taraba State University participated in the survey. Venous blood sample was obtained from students selected randomly. HBV screening was performed using the HBsAg Rapid diagnostic test strip. It is a rapid visual immunoassay for the qualitative detection of HBsAg on human whole blood. The whole blood, was dropped on the test strip with a disposable pipette and a buffer solution was added to the to the strip immediately and allowed for 10minutes after which the result was interpreted.

Results: It was discovered that 28males representing 19% of the total respondent tested positive to HBsAg and 10% of the males tested positive to HCV.
On the other hand, 18 of the females representing 12% of the respondent tested positive to HBsAg while 9(6)% tested positive to HCV. On a general note,46(15)% of the total respondent (male and female) tested to HBsAg while 24(8)% of the total respondent tested positive to HCV. It was discovered that 132 of the total respondent(female) representing 88% tested negative to HBsAg while 59 representing 39% of the respondent tested negative to HCV.

Conclusion: This research indicated that HBsAg and Anti-HCV infection is highly prevalent among students of Taraba State University sadly majority of them are unaware of their status which could lead to the end stage liver disease if diagnosed late.

94

Shifts in Routine Vaccine Confidence During the COVID-19 Pandemic in Kinshasa Province, DRC: A Mixed-Methods Approach

Boisson A[1], Morgan C[1], Ngimbi Nsuka P[2], Stover A[1], Mbonze N[2], Matondo J[2], Ntambua S[2], Parr J[1], Yotebieng M[3], Kashamuka M[2], James L[1], Mampunza S[2], Thompson P[1]
[1]*University Of North Carolina, Chapel Hill, Chapel Hill, United States,* [2]*Université Protestante au Congo, Kinshasa, Democratic Republic of the Congo,* [3]*Albert Einstein College of Medicine, Bronx, United States*

Background: After observing decreased uptake of hepatitis B (HBV) vaccination offered free-of-charge through our HBV research program in Kinshasa, DR Congo, we developed the Shift in Vaccine Confidence (SVC) survey tool to assess the COVID-19 pandemic's impact on routine vaccines. Leveraging the SVC tool, we employed mixed methods to measure vaccine confidence shifts before and during the pandemic and explored themes influencing participants' HBV vaccination uptake.

Methods: We administered in-person SVC surveys with adults in Kinshasa Province eligible for HBV vaccination in Kinshasa. Eligible participants were HBV-negative, HBV-exposed, and ≥18 years of age, a population born before the introduction of infant HBV vaccination to the national immunization schedule. We stratified our sample based on receipt, acceptance but failure to present to an appointment, or refusal of HBV vaccination. We performed t-test hypothesis testing comparing before and during pandemic responses to measure shifts in vaccine confidence. We also coded open-ended responses to explore context-specific vaccine uptake and perception determinants.

Results: From April 2022 to February 2023, we administered SVC to a convenience sample of 42 participants, 9 receivers, 22 accepters, and 11 refusers. We observed reductions in the belief that vaccines are safe [F(1, 82) = 6.78, p = 0.011, (μsafe_before = "yes":33(79%), "unsure":7(17%), "no":2(5%)); μsafe_after = "yes":20(48%), "unsure":19(45%), "no":3(7%))] and new vaccines are without higher risk [F(1, 82) = 4.64, p = 0.034 (μnorisk_before = "yes":11(26%), "unsure":22(52%), "no":9(21%); μnorisk_after = "yes":18(43%), "unsure":21(50%), "no":3(7%))]. Preliminary qualitative analysis identified four emergent domains impacting uptake decisions: vaccine confidence, vaccine knowledge, vaccine risks, and external influences.

Conclusion: Leveraging the SVC tool, we used mixed methods to assess routine vaccine confidence shifts due to the pandemic. Among participants, we found concerns over vaccine safety and low confidence in new vaccines. We also found low vaccine knowledge and influences, such as the media or religion, impacting vaccine uptake. These findings inform the pandemic's influence on routine immunization and require due consideration for future vaccine campaigns.

95

Mobilizing Members of Parliament,Community Leaders,Healthcare Workers and Women Attending Antenatal Care at Profiled Health Delivery Point in Rwenzori Region to Raise Awareness About Hepatitis Birth Dose Introduction and Its Importance in Uganda

Arafat B[1], Kibaba F[1], Meresi K[2], Margret A[3]
[1]Great Lakes Peace Centre/Bwera General Hospital, Kasese, Uganda, [2]Bwera General Hospital, Kasese, Uganda, [3]Parliament of Uganda , Kampala, Uganda

Background: Hepatitis B virus is the leading cause of liver cancer in Africa.1 in 4 newborns infected with HBV dies prematurely from liver disease and cancer. A timely birth dose of hepatitis B vaccine given to newborns can prevent most of these infections, related complications and deaths. However, only 6% of newborns in Africa receive a timely HepB-BD vaccine. In March 2021,GLPC received financial support from Coalition for global hepatitis elimination to raise awareness about introduction of hepatitis birth dose and its importance working closely with officials of Ministries of Health, clinicians, civil society organizations,Pregnant women attending antenatal care in profiled health facilities. GLPC convened 2 meetings with members of parliament from Rwenzori Region and the parliament of Uganda from March25, 2022– august, 9-2022. One challenge identified by 50+ shades of opinion was the lack of knowledge (Myth,hesitance Misconception),awareness of the importance of HepB-BD vaccination as a major challenge in Rwenzori region and Uganda. This abstract describes novel program to support,amplify the profile of hepatitis birth dose importance and introduction in Uganda through advocacy the efforts by GLPC in kasese Rwenzori and Uganda across in raising awareness of the importance of HepB-BD vaccination for communities including parliament to cause policy shift and resource allocation through domestic funding this culminated into formation of parliamentary forum for hepatitis under parliament of Uganda GLPC convened 8 Health education among pregnant women attending antenatal care, 4 community Baraza for stakeholder engagement and Table talks and parliamentary meeting to engage on hepatitis vaccination.

Methods: March, 2022 GLPC with funding to support CSOs to develop,implement novel approaches to raise awareness about HepB-BD vaccination targeted 1) community leaders and policy-makers, 2) community, women of reproductive age,3) healthcare providers. GLPC with experience in infant immunization.

Results: GLPC initiated projects to develop infographic,audio/visual recordings using local languag. GLPC also begun media campaigns,are planning high-level meeting with Ministry,parliament.GLPC carried out community medical education, baraza,CME,dialogue with religious,cultural leaders.

Conclusions: Uganda through parliament,Ministry of health has introduced and integrated HepB-BD into routine Uganda expanded program for immunization.

Recommendation. The engagement of grass root Youth led CSO's should be explored widely in vaccination.

96

Hepaticojejunostomy in Proximal Bile Duct Injury by Left Hepatic Duct Approach for Patients Attended at Muhimbili National Hospital

Yesaya Swallow A[1], Mwanga A[2]
[1]MUHIMBILI NATIONAL HOSPITAL (MNH), ILALA, Tanzania, United Republic of, [2]MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES (MUHAS), ILALA, TANZANIA

Background: Laparoscopic cholecystectomy has become a gold standard treatment for symptomatic cholelithiasis and other related diseases done in most centers worldwide. It is associated with an increase in frequency of iatrogenic biliary injury with an incidence of 0.3–0.7%, resulting in a significant impact on quality of life, overall survival, and frequently medico-legal obligations. Early recognition of bile duct injury (BDI) is of supreme importance towards early treatment and good outcome. With an experienced hepatobiliary surgeon, hepaticojejunostomy by left hepatic duct approach is often challenging and considered impossible due to scarring and fibrosis but has a noble outcome for proximal common hepatic duct injury.

Cases presentation: We described two cases from northern Tanzania who had iatrogenic proximal bile duct injury following laparoscopic cholecystectomy. Hepaticojejunostomy by left hepatic duct was the approach used after difficult dissection at porta hepatis and partly the liver tissue to attain a significant length of the left hepatic duct for anastomosis done at least 3 months post-bile duct injury. No postoperative complication was observed, which includes biliary fistula, restenosis, peritonitis, and cholangitis. To date, no evidence of biliary stenosis or other biliary complication happened during follow-up for 1 year.

Conclusion: Early recognition of BDI is of supreme importance towards early treatment and good outcome. With an experienced hepatobiliary surgeon, hepaticojejunostomy by left hepatic duct approach has an honorable outcome for proximal bile duct injury.

97

Integration of Hepatitis B and C Testing in Healthcare Programs and Services in Nigerian Health Facilities

Ariri-edafe J[1], Green K[1], Ikpeazu A[3], Ward J[2], Ejembi J[1], Nwakaego C[3], Njuguna H[2], Ejeckam C[1]
[1]West Africa Centre for Public Health and Development (WACPHD/IGPH) University of Manitoba, Nigeria Office., Abuja, Nigeria, [2]Coalition for Global Hepatitis Elimination , Decutar, United States of America, [3]Federal Ministry for Health , Abuja, Nigeria

Background: The effectiveness and efficiency of healthcare delivery are greatly enhanced by the integration of healthcare programs. To provide complete and holistic care to individuals and communities, it requires the coordination and collaboration of many programs and services. The goal of integrating healthcare programs is to eliminate organizational barriers, improve provider collaboration and communication, and speed up service delivery. Integrating hepatitis B virus (HBV) and hepatitis C virus (HCV) testing into current healthcare systems and services is essential for enhancing diagnostic capabilities and broadening the testing's applicability.

Methods: This study evaluated the capacity of Nigerian healthcare facilities to test and treat patients for hepatitis B and C. It comprised 129 particular Nigerian facilities. A method that takes an 8.1% prevalence rate into consideration was used to determine the sample size. For the selection of facilities, non-probability purposive sampling was used. An electronically delivered, structured questionnaire was used to collect the data. In order to provide insights into the current condition of hepatitis testing and drive healthcare improvements and policy formulation, data were sorted and analyzed using Excel and SPSS, respectively.

Results: The result shows that hepatitis B virus (HBV) and hepatitis C virus (HCV) tests were integrated into other programs within the studied facilities, with 71% of the facilities reporting such integration. In particular, 64% of the facilities

combined HBV and HCV testing with services and programs for HIV, TB, or COVID-19. Primary, secondary, and tertiary health facilities reported various degrees of HBV and HIV screening for blood donors, with 37%, 93%, and 100% of facilities, respectively. Similar HCV and HIV screening rates were 40%, 93%, and 100%, respectively.

Conclusion: The findings of this study underscore the importance and potential of integrating hepatitis B virus (HBV) and hepatitis C virus (HCV) testing into existing healthcare programs and services. A significant proportion of the studied facilities have successfully integrated HBV and HCV testing with programs related to HIV, tuberculosis (TB), or COVID-19, indicating a positive trend in expanding testing capabilities and improving overall healthcare outcomes.

98

Assessment of Hepatitis B and C Testing, and Treatment Capacity: The Nigeria Hepatitis Evaluations to Amplify Testing and Treatment Project

Ganiyu J[1]
[1]National Aids, Viral Hepatitis And Stis Control Programme, Federal Ministry Of Health, Abuja, Nigeria, Abuja , Nigeria

Background: Nigeria has one of the highest burdens of viral hepatitis with a national HBV prevalence rate of 8.1% among adults population, with reported high infection rate among the key populations. Unfortunately, the majority of individuals with chronic viral hepatitis are unaware of their condition and do not receive the necessary care due to limited capacity for diagnosis and treatment This study is aimed to assess, estimate and make policy recommendations to government and relevant stakeholders.

Methods: A cross-sectional study with non-probability purposive sampling was used to select 129 health facilities (63 health facilities in Nasarawa and 66 health facilities in Akwa-Ibom States) from April, 2022 to February, 2023. A pre-tested structured interviewer-administered questionnaire configured on android tablets was used to collect data on facility biodata, service provision, testing platform, cost of testing, client's payment method and current maximum testing capacity, Analysis was done using descriptive statistics.

Results: Majority of the facilities in Akwa Ibom and Nasarawa States were secondary health facilities (62%) and primary health facilities (63%) respectively. While 92% of facilities in both States offered HBV and HCV testing, only 7% and 1% of the facilities offered either HBV or HCV testing only. Most clients tested were self-referred (79%) and 71% of the facilities in both states had HBV and HCV testing integrated into other programs. Screening for HBV and HIV for blood donors was 37% at primary health facilities and only 28% of the cost for services was covered through health insurance. While the median number of days for laboratory testing was 7 days, only 10 hours was the mean number of hours for laboratory testing per day.

Conclusion: There was inadequate support for viral hepatitis testing and treatment programs as the major mode of payment was out of pocket. The daily and weekly testing and treatment capacities were low because of poor budgetary allocations, inadequate staffing and poor logistics system. Therefore, government at all levels need to support training of health workers on demand for viral hepatitis testing and treatment, as well as improve budgetary allocations and support free viral hepatitis services for all citizens.

99

HBV/HIV & HCV/HIV Co-Screening in Selected facilities– Lessons from the Hepatitis Evaluation to Amplify Testing & Treatment(HEAT) Pilot Project in Akwa ibom & Nasarawa States, Nigeria.

Ejeckam C[1], Green K[1], Adesina A[1], Ikpeazu A[2], Nwakaego C[2], Ganiyu J[2], Ward J[3], Hierbert L[3], Njujuna H[3]
[1]Institute For Global Public Health, University Of Manitoba (nigeria Office), Abuja, Nigeria, [2]National AIDs,STI and Viral Hepatitis Control Programme, Abuja, Nigeria, [3]Coalition for Global Hepatitis Elimination, Decatur, United States of America

Background: Nigeria has the highest burden of viral hepatitis with a national average prevalence of 8.1% for HBV(10.3% in men and 5.8% in women)and 1.1% for HCV(1.3% in men and 1.0% in women).The country has a co-infection rate of 8.9% and1.1% for HIV/HBV and HIV/HCV among people living with HIV(PLHIV)aged 15-49 years respectively(NAIIS,2018).Nigeria is a signatory to the World Health Assembly's guideline on Triple elimination,which recommends the mandatory screening of patients for hepatitis,HIV and Syphilis across levels of care.The HEAT project objective includes the assessment of current testing capacity and strategies for HBV and HCV elimination in Nigeria.The HEAT project questionnaire was used to assess facilities that co-screen for HCV and HIV,as well as HBV and HIV.

Methods: A descriptive cross-sectional design in selected health facilities in study states.A non-probability purposive sampling was used to select 129 health facilities providing HBV and HCV testing in the two states.Section A of the questionnaire comprising of health facility biodata,which include name,address,type of facility,service provision,types of hepatitis testing offered,testing platform, point of entry for HBV and HCV testing,while the Section B obtain information on laboratory operations,e.g.number of tests per day/week/month,integration of hepatitis and HIV services,including HIV co – screening, etc.Data analysis was effected using Microsoft Excel and SPSS vs 22.

Results: From the analysis of collected data,66% of facilities in both states offer HBV and HIV co-screening.In terms of specifics, approximately 73% of facilities in Akwa-ibom offer HBV and HIV co-screening while 27% do not.In Nasarawa,59% of facilities offers HBV/HIV co-screening while 41% do not.For HCV co-screening, 68% of facilities in both states offers the service.In terms of state specifics,76% of facilities and 59% of facilities offers HCV/HIV co-screening while 24% and 41% of facilities do not offer co-screening service in Akwa-ibom and Nasarawa states respectively.

Conclusion: Vertical programme Integration is the mainstay of most sustainable facility level care,whereby cross-sectoral integration ensures the efficient deployment of resources,enabling the use of limited resources to manage more than one disease of public health importance.This study has revealed insightful information that can be used in planning and ensuring compliance to global and national guidelines with regards to viral hepatitis elimination.

100

The Effective and Efficient Solution for Collecting High-Quality Data Using an Electronic Data Collection System. Lesson Learnt for the Nigeria Hepatitis Evaluations to Amplify Testing and Treatment (Heat) 2022

Ejembi J[1], Green K[1], Adediran A[1], Ejeckam C[1]
[1]*West African Centre For Public Health And Development, An Affiliate of Institute for Global Public Health, UOM, Abuja , Nigeria*

Background: In today's data-driven world, Accurate and trustworthy data must be gathered in order to make informed decisions, develop policies, and evaluate programmes. This is especially true in the healthcare industry, where access to high-quality data can have a big impact on public health programmes and contribute to improved outcomes. The Hepatitis Evaluations to Amplify Testing and Treatment (HEAT) 2022 project is a significant example of how electronic data collection techniques can be used to optimize data collection.

Methods: To effectively collect and manage data pertaining to hepatitis testing and treatment capacity from 129 health facilities, tools for data collection were designed and deployed using an electronic data collecting system. To boost data quality, data analysis, and eventually to promote precise evidence-based decision-making. By allowing skips and pertinent questions that guided the process of data collection to capture key indicators to evaluate the facilities' capacity to carry out high-quality testing and treatment for hepatitis B and C. This system provided an effective solution to streamline data collection processes. The process was kept under observation by a daily review and feedback procedure from the data hub.

Results: A comparison of paper-based data collection with electronic data collection showed that direct data entry via Android was faster, The process of gathering data produced an efficient real-time process monitoring that allowed for the speedy and precise acquisition of all data elements from all 129 evaluated facilities. Data is more accurate and omission did not occur with electronic data collection. Delayed data turnaround times and late error detections in the paper-based system which made error corrections difficult were avoided using electronic data collection

Conclusion: Leveraging good practices learned from effective approaches like HEAT 2022 becomes essential as we traverse the difficulties of data collection in an increasingly digital environment. We should lay the foundation for revolutionary improvements in healthcare, which will ultimately result in better outcomes for patients and communities all around the world, by utilizing technology and putting in place effective data collection systems.

101

Facility Level Assessment of Progress Towards Universal Health Coverage and Availability of Supply-Side Cost in Viral Hepatitis Disease Management: Result from the Hepatitis Evaluation to Amplify Testing & Treatment (HEAT) Project in Akwa-ibom & Nasarawa State, Nigeria.

Ejeckam C[1], Green K[1], Ikpeazu A[2], Ganiyu J[2], Bosah E[2], Ward J[3], Hierbert L[3]
[1]Institute For Global Public Health, University Of Manitoba (nigeria Office), Abuja, Nigeria, [2]National AIDs, STI and Viral Hepatitis Control Programme, Abuja, Nigeria, [3]Coalition for Global Hepatitis Elimination, Decatur, United States of America

Background: Nigeria has the highest burden of viral hepatitis with a national average prevalence of 8.1% for HBV(10.3% in men and 5.8% in women)and 1.1% for HCV (1.3% in men and 1.0% in women).

The principles of UHC aims at eliminating all forms of barriers to quality and affordable healthcare,including elimination of out-of-pocket expenditure for health service.Its target the minimizing (and possible elimination)of all forms of barrier that impedes an individual inalienable right to health.Universal Health Coverage hopes to achieve equity in health financing through a systematic health insurance programme.Unfortunately,in many disease areas,Nigeria has not been able to meet the ideals of a functional health insurance initiative.The HEAT project assessed the various payment options for patients seeking viral hepatitis testing services in Akwa-ibom and Nasarawa states.

Methods: A descriptive cross-sectional design in selected health facilities in study states A non-probability purposive sampling was used to select 129 health facilities providing HBV and HCV testing in the two states.Section A of the questionnaire comprising of health facility biodata, which include name,address,type of facility, service provision,types of hepatitis testing offered,testing platform,point of entry for HBV and HCV testing,while the Section B obtain information on laboratory operations,e.g.number of tests per day/week/month,mode of payment for services, integration of hepatitis and HIV services,etc.Data analysis was effected using Microsoft Excel and SPSS vs 22.

Results: Across both states, approximately 28%,22%,92% and 17% of patients pay through government/National Health Insurance,Private Insurance,Out-of-pocket and other sources respectively.At the sub-national level,6%,8%,86% and 33% and 51%,37%,98% and 0% pay through similar means in Akwa-ibom and Nasarawa states respectively.In terms of supply-side cost,50% of facilities in Akwa-ibom has these cost available compared to 24% in Nasarawa.About 50% and 76% of facilities do not have this cost in both states respectively.

Conclusions: The high rate of out-of-pocket health service expenditure in both states is a challenge in the achievement of universal health coverage.Efforts should be intensified towards ensuring that quality care in hepatitis disease control is affordable, especially at the basic level.Also,supply side cost should be increased and sustained to ensure availability of materials needed for precise diagnostic of viral hepatitis diseases in facility laboratories.

102

A Case on Leveraging Community Approaches as Entry Points in Improving Viral Hepatitis B & C Testing: Result of the Hepatitis Evaluation to Amplify Testing & Treatment in Akwa-ibom & Nasarawa State, Nigeria.

Ejeckam C[1], Green K[1], Adesina A[1], Ikpeazu A[2], Nwakaego C[2], Ganiyu J[2], Ward J[3], Hierbert L[3], Njugoma H[3]

[1]Institute For Global Public Health, University Of Manitoba (nigeria Office), Abuja, Nigeria, [2]National AIDs, STI and Viral Hepatitis Control Programme, Abuja, Nigeria, [3]Coalition for Global Hepatitis Elimination, Decatur, United States of America

Background: Nigeria has the highest burden of viral hepatitis with a national average prevalence of 8.1% for HBV(10.3% in men and 5.8% in women)and 1.1% for HCV(1.3% in men and 1.0% in women).
According to a published review:Community Involvement in Health Care (National Library of Medicine,WHO 2008),community participation and contribution to health systems has been recognized as central for primary healthcare and accepted as an essential element of many public health interventions.Project initiatives that are embedded within community structures have shown resilience,and have provided sustainable leverages for optimized service delivery and system strengthening,e.g.in HIV&TB.Adopting proven community approaches can contribute to demand creation-access to testing services,thereby fast-tracking linkage to care.Community platforms can bridge entry points gaps in public health initiatives.The HEAT project assessed the various entry point options for viral hepatitis testing in the 2 study states.

Methods: A descriptive cross-sectional design in selected health facilities in study states.A non-probability purposive sampling was used to select 129 health facilities providing HBV and HCV testing in the two states.Section A of the questionnaire comprised of health facility biodata, which include name,address,type of facility,service provision,types of hepatitis testing being offered,testing platform, point of entry for HBV and HCV testing,while the Section B obtain information on laboratory operations, e.g. number of tests per day/week/month, integration of hepatitis and HIV services,entry points options,etc.Data analysis was effected using Microsoft Excel and SPSS vs 22.

Results: The data shows that 79% of those who tested came in through self-referral.Across the 2 states,this mode of entry was 54% in Akwa Ibom State compared to 100% in Nasarawa State.In Akwa-ibom,about 88% of patients came through referrals from other units within the facilities compared to 81% of same in Nasarawa.Referals through external facilities were 57% in both states(44% in Akwa-ibom & 71% in Nasarawa).Referrals from community outreaches (47%)were the least mode of entry in both States 62% in Akwa-ibom &32% in Nasarawa.

Conclusions: Community approaches can serve as viable points of entry into careThe need to explore options that demonstrates result in a sustainable way, and at relatively minimal cost,cannot be over-emphasized.Community outreaches,especially in areas where knowledge and awareness are low must be strengthened

103

Type and Distribution of Viral Hepatitis B & C Testing & Treatment Facilities in Nigeria: Lessons from the Hepatitis Evaluation to Amplify Testing & Treatment(HEAT) Pilot Project in Akwa ibom & Nasarawa States, Nigeria.

Ejeckam C[1], Green K[1], Ejembi J[1], Ikpeazu A[2], Ganiyu J[2], Bosah E[2], Ward J[3], Hierbert L[3]

[1]Institute For Global Public Health, University Of Manitoba (nigeria Office), Abuja, Nigeria, [2]National AIDs, STI and Viral Hepatitis Control Programme, Abuja, Nigeria, [3]Coalition for Global Hepatitis Elimination, Decatur, United States of America

Background: Nigeria has the highest burden of viral hepatitis with a national average prevalence of 8.1% for HBV and 1.1% for HCV.

Effective coverage is necessary in the drive towards total HCV and HBV elimination in Nigeria.Unfortunately,the size and distribution of facilities that are able to offer hepatitis testing and treatment services do not match the population size of those affected by the virus. Hence,the HEAT project assessed the type and distribution of facilities that offer HBV and HCV testing services in the 2 states.

Methods: A descriptive cross-sectional design in selected health facilities in study states.A non-probability purposive sampling was used to select 64 health facilities providing HBV and HCV testing in each of the two states.Section A of the questionnaire comprising of health facility biodata,which include name,address,type of facility, service provision,types of hepatitis testing offered,testing platform,while the Section B obtain information on laboratory operations,e.g. number of tests per day/week/month,integration of hepatitis and HIV services,etc.Data analysis was effected using Microsoft Excel and SPSS vs 22.

Results: Analysis shows that 76% of facilities are public/government owned while 24% are private facilities in both states. In terms of level of care,about 48%,47% and 5% of facilities assessed offer primary,secondary and tertiary levels of care respectively.In Akwa-ibom specifically,36%,62% and 2% of facilities are primary, secondary and tertiary healthcare facilities while in Nasarawa,60%,32% and 8% of facilities belong to same categories respectively.In both states,8% of facilities assessed offer either HBV or HCV testing whole 92% offer both services.In terms of specific type of test offered by state,14% and 2% of facilities offer either one of the two while 86% and 98% offer both HBV and HCV testing services in Akwa-ibom and Nasarawa states respectively.In both states,73%,22%,0% and 5% of all laboratory facilities assessed are affiliated to public,private,academic and non-governmental organizations respectively.

Conclusions: Strengthening capacity of facilities at the primary healthcare level is important in the drive towards elimination of viral hepatitis as most of facilities assessed offer primary levels of care.This will require efficient management and deployment of human resources and other essential inputs that makes for a functional health system.

104

Maintaining a Longitudinal Hepatitis B Cohort in Africa: Practical Lessons From the MRC Gambia Experience

Bojang L[1], Dondeh B[1], Lemoine M[1,2], Ndow G[1,2]
[1]MRC Unit The Gambia at LSHTM, Fajara, Gambia, [2]Division of Digestive Diseases, Imperial College London, London, United Kingdom

Background: The Medical Research Council Unit The Gambia (MRCG) has been conducting viral hepatitis research studies in The Gambia (West Africa) since the 1980s. In 2012, the MRCG hosted the PROLIFICA (Prevention of Liver Fibrosis and Cancer in Africa) program and supported the set up and maintenance of a longitudinal population-based cohort of adults with chronic hepatitis B (CHB) infection.

Methods: Various available commercial off-the-shelf software were trialed to determine the most suitable. Finally, REDCap, a secure web platform for building and managing online databases, was used to build electronic case report forms eCRF). The REDcap database was linked the MRCG electronic medical record system (EMRS), laboratory information management system (LIMS), ItemTracker and biobank systems. A senior data manager managed the database and standard operating procedures (SOPs) developed to guide data coding, collection, storing, curating; security standards; and query management. Offline versions of eCRFs were developed for data collection in the field with subsequent data uploading.

Results: Database development took 2weeks and an additional week to train inexperienced staff. In-built data validation checks offered real-time data assessment of data quality in the field or clinic. From first point of entry, all eCRFs are marked as "unverified" with a senior research nurse, clinician or research coordinator reviewing all eCRF before uploading onto the server. These steps minimise incorrect and incomplete data, and ensured priority attention for patients likely to be eligible for CHB antiviral therapy.

Queries were raised monthly and resolved by the clinic, field and lab teams. Standard codes were used to identify resolved queries, missing data that

cannot be accessed and pending data that needs follow up. Linking the REDCap database to EMRS and LIMS ensured direct transfer of additional clinical and laboratory data into the REDCap database, reducing staff time and minimising errors. In-build REDCap functions for data queries and report generation helped clinical and field teams generate call lists, plan follow up and monitor adherence and retention in care.

Conclusion: Management of a longitudinal CHB cohort using simple commercial off-the-shelf software like REDCap is feasible in Africa and can be integrated within existing clinical and laboratory services.

105

Financial and Resource Allocation for Hepatitis Testing Services in Nigerian Health Facilities: Gaps and Implications

ariri-edafe j[1], Edafe-Ariri J[1], Green K[1], Ejeckam C[1], Ward J[2], Ikpeazu A[3], Ejembi J[1], Adah J[1]
[1]West Africa Centre for Public Health and Development (WACPHD/IGPH) University of Manitoba, Nigeria Office., Abuja, Nigeria, [2]Coalition for Global Hepatitis Elimination , Decutar, United States of America, [3]Federal Ministry for Health , Abuja, Nigeria

Background: Access to adequate financial support and resource allocation is crucial for effective healthcare provision, including hepatitis testing services. Hepatitis B and C viruses (HBV and HCV) present a significant public health challenge in Nigeria, necessitating robust testing services for timely diagnosis and management. Understanding access to financial support and resource allocation is vital for addressing the burden of these infections and improving patient care outcomes. Enhancing financial support and resource allocation is essential to improving the accessibility and effectiveness of hepatitis testing services, leading to improved public health outcomes.

Methods: This study assessed the prevalence and testing capacity of hepatitis B and C in Nigerian health facilities. It included 129 selected facilities in Nigeria. The study population comprised laboratory personnel involved in testing for the past five years. A sample size was determined using a formula considering an 8.1% prevalence rate. Non-probability purposive sampling was used to select the facilities. The data were collected through a questionnaire administered electronically. Data were sorted and analyzed using Excel and SPSS, respectively.

Results: The study revealed that government health insurance schemes only cover 28% of the payment costs in health facilities. Surveyed facilities showed that only 21% had a dedicated budget for hepatitis testing services, with only 14% reporting an adequate budget. However, among the facilities with a budget for hepatitis testing, 92% successfully implemented it as planned. Supply-side costs for hepatitis testing were available in only 26% of the facilities.

Conclusions: These findings highlight the need for increased financial support and resource allocation to ensure affordable and accessible hepatitis testing services in healthcare facilities. The low percentage of facilities with a dedicated budget for hepatitis testing (21%) further emphasizes the lack of financial prioritization for this crucial service. However, it is encouraging that among the facilities with a budget, a majority successfully implemented it as planned, indicating the potential effectiveness of proper resource allocation. The limited availability of supply-side costs for hepatitis testing (26%) presents additional challenges to scaling up testing services.

106

Assessment of Hepatitis Testing Capacity in Nigerian Health Facilities: Implications for Access and Quality

Ariri-edafe J[1], Green K[1], Hiebert L[3], Ganiyu J[2], Ejeckam C[1], Ejembi J[1], Bosah E[2]
[1]West Africa Centre for Public Health and Development (WACPHD/IGPH) University of Manitoba, Nigeria Office., Abuja, Nigeria, [2]Federal Ministry for Health , Abuja, Nigeria , [3]Coalition for Global Hepatitis Elimination , Decatur, United States of America

Background: Hepatitis is a global public health concern, affecting millions of people worldwide. In Nigeria, like many other countries, hepatitis poses a significant burden on individuals, families, and the healthcare system. Effective management and

control of hepatitis require timely and accurate testing to ensure early detection, appropriate treatment, and the prevention of further transmission. However, access to quality hepatitis testing remains a challenge in Nigeria. As a major tenet of the health system, access to health services is not limited to the provision of services alone; the role of quality in service provision must equally be relative in this regard.

Methods: This study assessed the prevalence and testing capacity of hepatitis B and C in Nigerian health facilities. It included 129 selected facilities in Nigeria. The study population comprised laboratory personnel involved in testing for the past five years. A sample size was determined using a formula considering an 8.1% prevalence rate. Non-probability purposive sampling was used to select the facilities. The data were collected through a questionnaire administered electronically. Data were sorted and analyzed using Excel and SPSS, respectively.

Results: The majority of the facilities (76%) were public, while the rest were private. The facilities had equal representation at the primary and secondary levels of service delivery, with limited participation from tertiary healthcare facilities. All facilities provided clinical laboratory services, with a similar proportion offering HBV and HCV laboratory services. Serology testing for both HBV and HCV was available in all facilities, with higher awareness for serology compared to core antigen and PCR testing. Self-referral was the most common entry point for HBV and HCV testing in the facilities.

Conclusions: The findings reveal that while the majority of facilities offer clinical laboratory services and provide testing for both HBV and HCV. Access to quality hepatitis testing remains a challenge. Self-referral emerges as the primary mode of entry for testing, indicating the need for improved outreach and community-based testing strategies. These findings emphasize the importance of strengthening testing services and addressing gaps in accessibility and quality to effectively manage and control hepatitis in Nigeria.

107

Data Science Research to Predict Chronic Hepatitis B Disease Progression and Outcomes: A Pilot Study in the Gambia

Asare D[1,2], Koné I[1], Bangura R[1], Bojang L[1], Lemoine M[1,3], Bah B[1,2], Ndow G[1,3]
[1]MRC Unit The Gambia at LSHTM, Fajara, Gambia, [2]African Institute for Mathematical Sciences, Cape Town, South Africa, [3]Division of Digestive Diseases, Imperial College London, London, United Kingdom

Background: Chronic hepatitis B (CHB) infection is a leading cause of morbidity and premature death in Africa. To date, there is very poor understanding on the predictors of disease outcome and mortality in Africa, and current treatment guidelines target patients who already have developed some degree of liver disease. Our study uses machine learning algorithms to test whether certain biomarkers or data patterns can predict disease outcome using longitudinal data from the PROLIFICA program in The Gambia.

Methods: The PROLIFICA program enrolled adults with CHB infection screened from the general population. A baseline (2012-2014) and at follow-up (2018-2021), all patients had comprehensive clinical and virological assessment which included collection of epidemiological, demographic, clinical, virological (HBV) and treatment data. We grouped all patients by disease outcome at follow-up and used machine learning algorithms namely logistic regression (LR), decision trees (DT), random forest (RF), naive Bayes (NB), support vector machines (SVM), and K-nearest neighbours (KNN) to predict the mortality outcome of patients for each group, incorporating all meta-data collected.

Preliminary Results: Between 2012-2014, 1,192 community-screen adults with CHB infection were enrolled in the PROLIFICA study in The Gambia. At follow-up in 2018-2021, after a median interval of 6.0 years (IQR 5.5-6.8), the overall mortality rate was 584/100,000 person-years (IQR:400-852), with baseline APRI ≥2 being a strong predictor of overall mortality (OR:7.2 (1.7-31.3), p=0.008) on epidemiological statistical analysis.

For the data science analysis, we used a different cross-validation approach to handle the large imbalanced target variable to produce optimum result. From the results, the scores for LR, DT, RF, NB, SVM, and KNN were 0.92, 0.94, 0.95,0.94, 0.90, and 0.92 respectively to predict mortality outcome. The features at baseline considered to be significant for predicting mortality were high fibroscan score, space occupying lesion, diagnosis of HCC, high albumin levels, high viral load, and high alanine transaminase (ALT) levels.

Conclusions: Known markers of advanced CHB and/or liver disease were identified as predictors for CHB-related mortality in this model, demonstrating model fitness. Further analysis to determine prediction of CHB disease progression, future treatment eligibility and outcome of treatment is ongoing.

108

In-field Evaluation of Xpert® HCV Viral Load Fingerstick Assay in People Who Inject Drugs in Tanzania

RWEGASHA J[1]
[1]*MUHIMBILI NATIONAL HOSPITAL (MNH), ILALA, Tanzania, United Republic of*

Background: Although novel hepatitis C virus (HCV) RNA point-of-care technology has the potential to enhance the diagnosis in resource-limited settings, very little real-world validation of their utility exists. We evaluate the performance of HCV RNA quantification using the Xpert® HCV viral load Fingerstick assay (Xpert® HCV VL Fingerstick assay) as compared to the World Health Organisation pre-qualified plasma Xpert® HCV VL assay among people who inject drugs (PWID) attending an opioid agonist therapy (OAT) clinic in Dar-es-Salaam, Tanzania.

Methods: Between December 2018 and February 2019, consecutive HCV seropositive PWID attending the OAT clinic provided paired venous and Fingerstick samples for HCV RNA quantification. These were processed onsite using the GeneXpert® platform located at the Central tuberculosis reference laboratory.

Results: A total of 208 out of 220 anti-HCV-positive participants recruited (94.5%) had a valid Xpert® HCV VL result available; 126 (61%; 95% CI 53.8-67.0) had detectable and quantifiable HCV RNA. About 188 (85%) participants had paired plasma and Fingerstick whole blood samples; the sensitivity and specificity for the quantification of HCV RNA levels were 99.1% and 98.7% respectively. There was an excellent correlation (R2 = .95) and concordance (mean difference 0.13 IU/mL, (95% CI −0.9 to 0.16 IU/mL) in HCV RNA levels between plasma samples and Fingerstick samples.

Conclusion: This study found excellent performance of the Xpert® HCV VL Fingerstick assay for HCV RNA detection and quantification in an African-field setting. Its clinical utility represents an important watershed in overcoming existing challenges to HCV diagnosis, which should play a crucial role in HCV elimination in Africa.

109

Prevalence of Erectile Dysfunction Among Sudanese Patients with Liver Cirrhosis

Kheir O[1], Mustafa Y[1], Abdalla H[1]
[1]*Research, Ncgld, Khartoum, Sudan*

Background: Even though sexual performance contributes significantly to quality of life, data on erectile function in people with liver cirrhosis are limited.

Objective: To study the frequency and severity of erectile dysfunction among Sudanese patients with liver cirrhosis in Ibn-Sina Specialized Hospital.

Methods: In this cross-sectional study, 86 male cirrhotic patients recruited between 2020-2021 in Ibn-Sina Specialized Hospital, Khartoum, Sudan, were studied in the period from November 2020 to March 2021. Erectile dysfunction was evaluated using International Index of Erectile Function-5 (IIEF-5): absent (>21), mild (17-21), moderate (8-16) and severe (5-7) by using International Index of Erectile Function-5 (IIEF-5). The severity of liver cirrhosis was graded by Child- pugh score. Statistical analysis was performed using Statistical Package for the Social Sciences (SPSS).

Results: The study comprised 86 patients with liver cirrhosis, the mean age of the patients was 52.7±11.5 years. Forty eight percent (n=42) were in Child-Pugh class -A, 26%, (n=22) were class-B, and 26 %(n=22) patients were class-C. Erectile dysfunction was detected in 69.7% patients, with 46.5 % having mild erectile dysfunction and 23.3% having moderate ED. There was a statistically significant relationship between erectile dysfunction and hypertension (P. value 0.016), smoking (P. value 0.046), alcohol (P. value 0.040), child-Pugh class-C (P. value 0.001), propranolol, and spironolactone (P. value 0.001).

Conclusion: Erectile dysfunction was prevalent among male patients with liver cirrhosis. There was significant relationship between erectile dysfunction and the severity of liver dysfunction, hypertension, smoking, alcohol, and beta-blockers among Sudanese patients with liver cirrhosis.

110

Usefulness of Fine Needle Aspiration Puncture (FNAP) Performed by Gastroenterologists in the Diagnosis of Hepatocellular Carcinoma (HCC) In Low Resource Countries, Experience From Mozambique (2016 – 2020)

Victor R[1], Ismail M[1], Mondlane L[1], Maibaze F[1], Carilho C[2], Machatine S[1], Veterano M[2]
[1]Maputo Central Hospital - Gastroenterology Service, Maputo, Mozambique, [2]Maputo Central Hospital - Pathological Anatomy Service, Maputo, Mozambique

Background: Hepatocellular carcinoma (HCC) is the most common primary malignant tumor of the liver and the sixth most common neoplasm worldwide. It is the third leading cause of cancer death and the most common malignant tumor in several regions of Africa and Asia.
To establish the diagnosis, an abdominal ultrasound may be required that reveals a multifocal liver mass and/or masses with arterial hypervascularity and increased serum levels of Alpha Fetus Protein (AFP).
In Mozambique, in the national health system there are difficulties to obtain the serum level of AFP in about 60% of the cases, and as a service flowchart in the Maputo Central Hospital (HCM), the Gastroenterology Service, performs an abdominal ultrasound and fine needle aspiration puncture (FNAP).

Methods: This is a retrospective, descriptive, hospital-based study at the Gastroenterology Service and at the Pathological Anatomy Service of the Maputo Central Hospital (HCM) for 5 years (2016 to 2020). The aim is to illustrate the effectiveness of FNAP in confirming the diagnosis of HCC in a low-resource country.
A database was evaluated in an Excel 2013 spreadsheet, and the cytology confirmation was verified and compared with the number of diagnostic abdominal ultrasounds during the analysis period.

Results: During the period under review (2016 – 2020) 1227 patients who underwent ultrasound-guided FNAP, 728 (59.3%) were male and 499 (40.7%) were female. 581 cases of HCC were confirmed, 338 (58.2%) were male and 243 (41.8%) female. Regarding the distribution by age the majority of cases 262 (45%) were aged between 21 and 40 years and the lowest number of cases 9 (1,5%) were aged between 20 and 20 years.

Conclusion: This is an easy-to-perform diagnostic method that can be performed in many patients with clinical and ultrasound suspicion in a low resource country. Mozambique is part of the least resource regions, which are defined as those where virtually no treatment options are available. There, priority should be given to prevention and symptomatic treatment.

111

Evaluation of Liver Fibrosis Among Sickle Cell Disease Patients in Buea , South West Region of Camerron Using the APRI and FIB-4 Score

Ojong E[1], Achidi E[1,2], Amih O[1], Cativelli L[1]
[1]Faculty of Health Sciences, University of Buea, Buea, Cameroon, [2]Faculty of Science, University of Buea, Buea, Cameroon

Background: Liver disease has been reported in 40% of sickle cell disease (SCD) patients. Frequent blood transfusion has the potential to impact upon liver functions in SCD patients due to iron overload, post-transfusion viral hepatitis B or C and sickle cell trapping in sinusoids. We sought to ascertain the prevalence of fibrosis among SCD patients in Buea.

Methods: A cross sectional hospital based study was conducted from February to May, 2023. Following a convenient sampling, hepatic function was evaluated using non-invasive liver function test parameters. A self-administered questionnaire was used to collect socio-demographic and clinical data. Data were analysed using the Statistical Package for Social Sciences, Version 28.0, with p<0.05 considered statistically significant.

Results: Of the 94 participants recruited in this study, 47 were SCD patients with mean±SD age of 17.4±7.7 years while the rest were healthy age and sex matched controls. The prevalence of fibrosis among the SCD patients using the aspartate aminotransferase to platelet ratio index (APRI) was 14.9 and this was higher compared to the prevalence in controls (4.3%). The prevalence of fibrosis using the fibrosis four score (FIB-4) was lower compared to that recorded using APRI and there was no difference in the prevalence between cases and controls (2.1%). SCD patients in steady state (10.4%) had a higher prevalence of fibrosis compared to their counterparts in crisis (4.3%). SCD patients had significantly higher levels of liver enzymes (P<0.001), platelet count (p<0.001) and significantly lower concentration of hemoglobin p<0.001 compared to the control group. There was a significantly higher mean AST activity and a significantly lower mean haemoglobin concentration in SCD patients in crisis compared to those in steady state.
Conclusion: The prevalence of liver fibrosis is relatively higher in sickle cell disease patients compared to healthy individuals in the city of Buea, with sickle cell disease patients in steady state affected more. The evaluation of fibrosis using the APRI and FIB-4 score holds great promise and should be validated by biopsy which remains the gold standard. There is also need for regular screening of sickle cell disease patients for liver disease for timely intervention.

112

Liver Elastography Scores in a Large Population Cohort in Rural Uganda

Lumley S[1,2], Kimono B[3], Mugisha J[3], Ssengendo B[3], Waddilove E[4], Ndungutse R[3], Kwizera Mbonye M[3], Ocama P[5], Matthews P[4,6,7], Newton R[3]
[1]Peter Medawar Building for Pathogen Research, Nuffield Department of Medicine, University of Oxford, Oxford, United Kingdom, [2]Department of Infectious Diseases and Microbiology, Oxford University Hospitals NHS Foundation Trust, Oxford, United Kingdon, [3]MRC/UVRI/LSHTM Uganda Research Unit, , Uganda, [4]The Francis Crick Institute, London, United Kingdon, [5]Makerere University College of Health Sciences in Kampala, , Uganda, [6]Division of Infection and Immunity, University College London, London, United Kingdom, [7]Department of Infection, University College London Hospitals, London, United Kingdom

Background: Chronic liver disease (CLD) represents an increasing healthcare burden in many global settings. In many populations in the WHO Africa region, the prevalence, aetiology and outcomes of CLD represent a neglected challenge. Non-invasive tests (NITs) such as elastography act as a surrogate measure of fibrosis. We (1) estimated the prevalence of liver disease in a large population cohort using elastography (2) defined the distribution of elastography scores in a subset of HBV or HIV infected individuals.

Methods: In 2023, 517 individuals were selected from the Uganda MRC General Population cohort, including a subgroup with known HBV infection. We performed a questionnaire, anthropometric measures and liver elastography (Fibroscan, Echosens). Median elastography score was expressed in kilopascal (kPa), scores with interquartile range/median >0.30 were excluded. We applied the following thresholds: <7kPa - CLD excluded; 7-12 kPa - indeterminate; >12 kPa - CLD likely.

Results: We reviewed 517 adults, median age 53 years (IQR 44-63), M:F 216:301, of whom 23 had HBV infection and 64 HIV infection. In the absence of chronic blood borne virus (BBV) infection, median elastography score was 5.3 (IQR 4.4 - 6.2), scores were >7kPa in 59/517 (11.4%) and >12kPa in 4/517 (0.8%), compared to (5/23 (21.7%) vs. 1/23 (4.3%) in HBV and 11/64 (17.1%) vs. 2/64 (3.1%) in HIV respectively. In a univariate analysis, elastography scores were higher in males (p=0.003) and HBV (median 6.4, IQR 5.7-6.7, p = 0.042). On multivariate analysis, the only feature

associated with scores >7kPa was decreasing BMI (OR 0.90, 95% CI 0.83 - 0.97).

Conclusion: In this rural East African population, elastography data suggest potential associations between liver fibrosis and HBV, male sex and low BMI. Work is ongoing to assess a larger cohort to increase statistical power, and to determine the relationship between elastography and laboratory parameters (liver enzymes, platelets). Understanding the aetiology and characteristics of CLD in populations in WHO Africa will be essential to reduce health inequities and to inform individual and public health interventions.

113

Proportion and Associated Factors of Insulin Resistance and Type 2 Diabetes Mellitus Among Individuals With Hepatitis B as an Indicator of Hepatogenous Diabetes

Hashim T[1]
[1]SHREE HINDU MANDAL HOSPITAL, ILALA, Tanzania, United Republic of

Background: Liver disease, infectious or non-infectious, affects glucose metabolism leading to Hepatogenous Diabetes (HD) with Insulin Resistance (IR) and Hyperinsulinemia. Early HD stages differ from T2DM, but distinguishing them becomes challenging as the disease progresses. Hepatitis B Viral infection (HBV), an endemic infection in Tanzania has been associated with IR and T2DM, which might potentially contribute to the rising diabetes burden.
Objective: To determine factors associated with insulin resistance and T2DM among mono-infected Hepatitis B patients attending Muhimbili National Hospital.

Methods: Hospital-based cross-sectional study was conducted between September 2019 and February 2020. Fasting Serum Insulin, Complete Blood Count, and Alanine Aminotransferase (ALT) were recorded. Oral Glucose Tolerance Test was performed and with Fasting Blood Glucose, glycemic control was assessed and the diagnosis of T2DM was made. Homeostatis Model Assessment–Insulin Resistance (HOMA-IR) was calculated to determine insulin resistance and WHO cut-off of HOMA-IR>2 was used as a diagnosis of insulin resistance. Data was analyzed using STATA Software 13.

Results: Out of a total of 395 recruited study patients majority were male (73.9%), with a mean age of 35.9±9.9 years. Majority were married (71.1%), almost 14% currently consuming alcohol and less than 6% ever smoked cigarettes. Known HTN patients were 10.1%, but 45.6% had measured hypertension. Male and female patients had similar abdominal obesity (30.1% and 32.9% respectively). Less than half (45.1%) of study patients were within normal BMI range, while a little over half were either overweight or obese (50.4%), and a minority were morbidly obese (4.1%). IR was found in 15.5% with male and female proportions of 14.0% vs 18.5% respectively. Proportion of T2DM was 3.5% (2.0% known and 1.5% newly diagnosed). WHR (Adjusted OR 2.54, 95% C.I. 1.28-5.02), BMI of morbidly obese (Adjusted OR 3.47, 95% C.I. 1.01-12.00) and elevated ALT (Adjusted OR 2.65, 95% C.I. 1.40-5.03) were found to be independently associated with IR.

Conclusion: The proportion of IR and T2DM were found to be relatively low. Associated factors of IR were similar to previous studies. Increased awareness and monitoring of patients with HBV infection having the possibility of developing complications such as Hepatogenous Diabetes is necessary.

114

Efficacy and Safety of Dapagliflozin Compared to Pioglitazone in Diabetic and Non-Diabetic Patients with Non-alcoholic Steatohepatitis: An Interim Analysis from a Randomized Clinical Trial

Gaber M[1], Adel A[2], Abbassi M[1], Abdelaziz D[2,3], Hassany M[2], El Raziky M[4], Sabry N[1]
[1]Department Of Clinical Pharmacy, Faculty Of Pharmacy, Cairo University., , Egypt, [2]National Hepatology and Tropical Medicine Research Institute, , Egypt, [3]Future University, , Egypt, [4]Endemic

Medicine and Hepatogastroenterology, Faculty of Medicine, Cairo University., , Egypt

Background: Non-alcoholic Steatohepatitis (NASH) is a rapidly rising global burden without a currently approved pharmacological treatment. Dapagliflozin showed positive results in diabetic NASH patients. We report an interim analysis from a clinical trial in diabetic and non-diabetic NASH patients aiming to investigate the efficacy and safety of dapagliflozin compared with pioglitazone that has the most favorable results in NAFLD/NASH population.

Methods: This is a four-arm prospective, randomized, parallel, open label study. Eligible biopsy-proven NASH patients aged 18 to 65 years were stratified into diabetic or non-diabetic groups. Each stratum was randomly assigned into dapagliflozin (10 mg) or pioglitazone (30 mg) in a 1:1 allocation; once daily for 24 weeks. The primary endpoint was the histological changes by liver biopsy. The secondary endpoints were assessed based on liver biochemical, lipid, blood glucose profiles, anthropometric measures, adverse events and quality of life. The study is ongoing and registered on clinicaltrials.gov, NCT05254626.

Results: This interim analysis is based on 53 patients who completed their middle-of-study follow up. At week 12 in both strata, dapagliflozin showed a significant improvement over time in anthropometric measures ($P<0.05$) while pioglitazone showed a non-significant change ($P>0.05$). In terms of biochemical changes in diabetic stratum, dapagliflozin showed a significant improvement in the AST, GGT and triglycerides levels ($P<0.05$) compared to a non-significant change in pioglitazone group ($P>0.05$). Additionally, the magnitude of AST, GGT and triglycerides decrease from baseline was significantly different between groups ($P=0.038$, 0.044, 0.015; respectively). While in non-diabetic stratum, pioglitazone showed significant improvement in ALT, AST and triglycerides levels ($P<0.05$) compared to a non-significant improvement showed by dapagliflozin ($P>0.05$). Moreover, the magnitude of AST and HDL improvement from baseline was significantly different between groups in favor of pioglitazone group ($P=0.002$, 0.032; respectively).

Conclusions: Despite the similar significant effect of dapagliflozin on anthropometric measures in both strata, the magnitude of reflection on biochemical measures is not the same. Compared to each other, dapagliflozin has a superior significant effect biochemically in diabetic while pioglitazone has a superiority in non-diabetic NASH patients. Future analyses of full-term data after study completion will confirm this early effect and show medications' impact histologically.

115

Défis de l'élimination de l'hépatite B au Mali : Dépistage et disponibilité de la dose de naissance du vaccin dans les centres de santé

Kone M[1,2], Cissoko Y[1], Kampo M[1], Sissoko H[1,3], Fofana D[1]

[1]University of Sciences, Techniques, and Technologies of Bamako, Bamako, Mali, [2]Departement de Zoologie University of Ibadan,, Ibadan, Nigeria , [3]Services des maladies infectieuses du CHU de Point G, Bamako, Mali, [4]Centre de santé de la commune 3, Bamako, Mali

Background: Pour réduire les nouvelles infections par le virus de l'hépatite B (VHB) de 90% á l'horizon 2030, l'OMS recommande le dépistage du VHB chez les femmes enceintes lors du bilan prénatal et l'administration d'une dose de vaccin contre le VHB dans les 24 heures suivant la naissance aux nouveau-nées de mères AgHbs+. Afin d'identifier les défis liés à la mise en œuvre de ces recommandations dans les maternités des districts sanitaires du Mali, nous avons mené cette étude.

Matériel et Méthode: Nous avons réalisé une enquête transversale, en administrant des questionnaires en ligne (émail et WhatsApp) et des questionnaires semi-directifs en copie dure aux personnels intervenant dans le suivi des femmes enceintes et des femmes en consultation pré-natale dans les districts sanitaires du Mali. Les données recueillies portaient sur le dépistage des femmes enceintes et la réalisation de la vaccination contre l'hépatite B à la naissance. SPSS et Excel ont été utilisés pour analyser des données.

Résultats: L'analyse globale a montré la participation de 29,7% des médecins spécialistes, 28,4% des médecins généralistes et 16,7% des sage-femmes. Seulement 47% des professionnels disent prescrire le dépistage du VHB aux patients

en général, 100% propose systématiquement le dépistage aux femmes enceintes lors du suivi prénatal. Cependant, 28% des femmes en consultation se disent non dépistées lors de leurs précédentes grossesses. Tous les participants estiment que pour prévenir l'infection au VHB il faut la vaccination chez les nouveau-nées et la prise du Tenofovir pendant la grossesse si la charge virale est élevée afin d'éviter la transmission mère-enfant.Cependant, la majorité des participants (72,2%) disent que la dose de naissance n'est pas disponible dans leurs centres.

Conclusion: Malgré, les recommandations de l'OMS et des autorités sanitaires du Mali, la difficulté d'accès à la dose de naissance du vaccin contre le VHB et la non réalisation du dépistage sont les défis majeurs dans l'élimination du VHB. Des efforts doivent être fait pour faciliter l'accès aux tests de dépistage, à la charge virale pour les femmes enceinte AgHbs+. L'accès au Tenofovir doit être garanti aux femmes à haut risque de transmettre le VHB à leurs bébés.

116

Evaluation de la Mise en Place du Programme de Vaccination à la Naissance Contre L'Hépatite B, Dans Quatres Districts du Burkina Faso

Guingane N[1], Sawadogo E[2], Goungounga J[3]
[1]Centre Hospitalier Universitaire Bogodogo (CHU-B), Ouagadougou, Burkina Faso, [2]Aix marseille Université , Marseille , France , [3]Écoles Des Hautes Études en Santé Publique, Rennes , France

Background: La vaccination à la naissance contre l'hépatite B (VHB), a montré son efficacité dans la prévention de la transmission mère-enfant (PTME) et en avril 2022, le vaccin monovalent contre le VHB a été introduit dans le programme élargi de vaccination (PEV) du Burkina Faso. Le but de ce travail était d'évaluer les résultats du PEV concernant la vaccination contre le VHB.

Matériel et méthodes: Il s'est agi d'une étude prospective, transversale, descriptive et analytique. Elle s'est déroulée du 1 mars 2023 au 31 mai 2023 dans 8 formations sanitaires: 2 urbaines (Baskuy et Nongremassom), 1 semi-rurale (Ziniaré) et 1 rurale (Sabou) choisie par échantillonnage aléatoire à plusieurs degrés. Une régression logistique a permis de rechercher les facteurs associés à l'effectivité de la vaccination dans les délais.

Résultats: Au total, huit services du PEV, 45 agents de santé et 1350 mères ont été enquêtés. Dans un seul centre (1/8) le réfrigérateur se situait en salle d'accouchement. Des températures hors normes ont été notées dans deux centres (2/8), au moins une fois par trimestre. Tous les agents de santé vaccinateurs signalent une maitrise insuffisante des contre-indications à la vaccination.
L'âge moyen des femmes était de 27 ans et des extrêmes de 14 et 47 ans. Le taux de couverture vaccinale global dans les 24 H était de 88,3% (N=1192) et celui dans les 12 H 64.81% (N=875). Celui-ci était meilleur en milieu rural qu'urbain.
La connaissance du délai des 24H par les mères (OR ajusté = 2.53 [1.70 - 3.77]), la naissance un jour ouvrable (OR ajusté = 2.12 [1.41 3.19]), la naissance dans une formation sanitaire offrant la vaccination en continue (OR ajusté =3.68 [2.27 - 5.93]) étaient des facteurs associés à la vaccination à la naissance dans les 24H de vie.

Conclusion: Notre étude a démontré que les couvertures vaccinales sont au-delà des objectifs fixés par le pays, cependant des disparités géographiques existent avec de meilleures couvertures dans les zones rurales. L'offre de services de vaccination continue, la formation/recyclage du personnel de santé et l'information des femmes enceintes lors des CPN pourraient améliorer les indicateurs.