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Abstracts
Oral Presentations

1

Integrating Hepatitis B Into HIV Programs in Sub-Saharan Africa: Pilot Clinic Experience in Zambia

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Background: 60 million individuals in sub-Saharan Africa (sSA) are living with chronic hepatitis B virus (HBV) infection, but <10% are diagnosed and in care. Best practices for chronic HBV care in sSA are not established. Zambia has a robust national HIV program that could be harnessed to efficiently and cost effectively provide HBV testing, treatment, and prevention. We piloted an HBV integrated care model at a public sector HIV clinic in Lusaka.

Methods: With catalytic funding from The Hepatitis Fund and based on meetings with experienced staff and administrators, we designated one half-day HIV clinic session per week for people with HBV at a public referral hospital's HIV clinic in central Lusaka. We established rapid HBsAg and HCV-Ab testing on site, created registries and clinical forms, and introduced HBV DNA testing with the clinic's GeneXpert machine. Existing staff, who had minimal prior experience managing HBV, rotated through the HBV clinic sessions under the supervision of expert clinicians, nurses, and counselors. Treatment consisted of combination tenofovir DF with lamivudine or tenofovir AF with emtricitabine, which are widely available through the HIV program and patients were given up to 6-month supplies of medication. Treatment-naïve patients with HBV were assessed for eligibility through history and physical examination, testing for HIV, liver transaminases, platelets, and HBV DNA, and liver fibrosis was assessed with transient elastography (TE), which was available through another program. Hepatitis B e antigen testing was not available. Among patients with at least one visit, we described demographic features, modes of HBV diagnosis, antiviral therapy eligibility, based on Zambian guidelines, and initial retention in clinical care.

Results: From September 2021 to June 2022, over 39 clinic sessions, 311 people with HBV infection were seen and contributed 529 (1.7/patient) visits. Median age was 36 years, 136 (43.7%) were women (35 were pregnant), 34 (10.9%) were HIV-coinfected, and 91 (29.2%) were already on treatment at linkage to the clinic. The leading ways people with HBV learned their status were testing at routine medical check-ups (66.7%), for signs and symptoms of a liver problem (24.8%), and at blood donation (8.5%). Among 220 treatment-naïve patients, 188 (85.4%) had at least ALT and 128 (58.2%) had a comprehensive lab assessment (ALT, AST, platelet, and HBV DNA). 68 (30.9%) were found to be treatment-eligible based on their initial assessment, and 35 have initiated treatment so far. The leading indications for treatment were family history of liver cancer/cirrhosis (n=28), cirrhosis by TE (n=22), and ALT elevation with DNA >20,000 IU/ml (n=20). Timely attendance at the next visit occurred for 144 (69.9%) of 206 with sufficient follow-up. 5 HCV-Ab-positive patients were enrolled; however, only 1 was RNA-positive.

Conclusions: We demonstrated the initial feasibility of a model of HBV-HIV care integration in Zambia. Gaps in laboratory testing undermined assessment of treatment eligibility and delayed the initiation of treatment in some who were eligible. Missed and late visits have also emerged as a challenge to realizing the benefits of chronic HBV care.

2

5-Year Results: of a Treatment Program for Chronic Hepatitis B in Ethiopia

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Background: The World Health Organization has set an ambitious goal of eliminating viral hepatitis as a public health threat by 2030. In sub-Saharan Africa, however, antiviral treatment of chronic hepatitis B (CHB) is virtually unavailable in the public sector. Experiences from existing CHB programs are needed to inform treatment guidelines and policy. Here we present 5-year results from one of the first and largest CHB treatment programs in Africa.

Methods: Adults with CHB were enrolled in a treatment program at St. Paul's Hospital Millennium Medical College, Addis Ababa, in 2015. Liver function tests, viral markers, and transient elastography were assessed at baseline and thereafter at 6-month intervals. Survival analysis was performed using the Kaplan Meier method. Tenofovir disoproxil fumarate (TDF) was initiated based on the European Association for the Study of the Liver criteria, with some modifications.

Results: In total, 1303 patients were included in the program, of whom 291 (22.3%) started TDF therapy within the first five years of follow-up. The estimated 5-year hepatocellular carcinoma-free survival was 54.2% among patients with decompensated cirrhosis, 88.8% with compensated cirrhosis, and 99.0% without cirrhosis. Liver stiffness declined significantly; median change from baseline after one, three, and five years was -4.0 kPa, -5.2 kPa, and -5.6 kPa, respectively.

Conclusion: This pilot program demonstrates the long-term benefits of CHB therapy in resource-limited settings. Our findings support rolling out large-scale treatment programs in sub-Saharan Africa.

3

Hepatitis B Birth Dose Coverage Remains Dramatically Low in the Gambia and Has Been Disrupted by the COVID-19 Pandemic

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Background: Africa has the lowest coverage of timely hepatitis B birth dose (HepB-BD) vaccination (11%) worldwide and lags far behind the 90% coverage target recommended by the WHO for viral hepatitis elimination by 2030. We aimed to assess i. the coverage and limiting factors of timely HepB-BD vaccination and ii. the impact of the COVID-19 pandemic on HepB-BD coverage in The Gambia, the first African country to introduce hepatitis B vaccination at birth in 1990.

Methods: We analysed data form the Health and Demographic Surveillance system (HDSS) in four areas in The Gambia. HepB-BD coverage was calculated at birth (0-1 day), day 7 and day 28 in children born between 2015 and 2021. We also performed multiple comparison tests and a logistic regression to identify factors associated with delayed HepB-BD delivery.

Results: Between 1 January 2015 and 31 July 2021, 77,913 births were recorded; of them 77,515 live births with complete information were analysed. 3,494/77,515 babies (4.5%) received a timely HepB-BD (within Days 0-1 of birth). The median age at first dose of HepB vaccination was 20 days (IQR: 12-31 days). HepB-BD was administrated by Day 7 and Day 28 in 7,308/77,515 (9.4%) and 38,239/77,515 (49.3%) babies, respectively.

Whilst timely HepB-BD coverage steadily increased over time (Figure), a major disruption was observed between March and August 2020, corresponding to the first wave of COVID-19 outbreak in The Gambia. Between March and August 2020, the timely HepB-BD coverage dropped from 9% (July 2019 to Feb 2020) to 5%.

Factors associated with lack of timely HepB-BD were:
- Births on Friday or Saturday (OR:3.2 (95% CI: 2.0 to 3.5), p value < 10-15),
- High maternal age (OR:1.5 (1.4 to 1.6), p < 10-12 for mothers older than 20 years with respect to (wrt) mothers younger than 20 years, and OR: 1.8 (1.6 to 2.1), p <10-15) for mothers older than 25 years wrt younger than 25 years)
- Delivery outside hospitals (OR: 4.6 (3.7 to 5.8), p <10-15) especially home delivery (OR:2.1 (95% CI: 1.9 to 2.3), p <10-15)
- Born to a primiparous mother (OR: 1.8 (1.6 to 2.2), p < 10-12)
- Delivery during the first COVID-19 outbreak (17 March 2020 - 1st August 2020) (OR:1.7 (1.4 to 1.9, p <10-11, among all babies born after June 2019).

Conclusions: More than 30 years after adoption of the HepB-BD vaccination, only minor progress has been made in timely HepB-BD coverage in The Gambia, putting at risk the HBV elimination goals.

4

Hepatitis B Infection Prevalence, Genotype Distribution, and Knowledge of Mother-To-Child Transmission Among Antenatal Care Attendees in Yako, Rural Burkina Faso

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Background: In countries where hepatitis B virus (HBV) infection is endemic, such as Burkina Faso, the majority of chronic HBV cases arise from infections acquired in infancy, including mother-to-child transmission (MTCT). Elimination of HBV requires information on the extent of infection in pregnant women in order to develop adequate interventions to prevent MTCT.

Methods: We conducted a cross-sectional study from February to November 2021 in three health centers in the health district of Yako, a rural setting in Northern Burkina Faso, where HBV screening is not routinely performed during pregnancy. A total of 1,622 consenting pregnant women were interviewed regarding their sociodemographic background and knowledge of HBV infection. Subsequently, HBV infection was screened by rapid test using the Abbott Determine HBsAg II Plus point-of-care with an analytical sensitivity of 0.1 IU/mL. In addition, dried blood spot (DBS) samples were collected from all HBV-positive pregnant women and one-fourth of non-infected women. All DBS samples were subjected to HBV seromarkers detection by chemiluminescent immunoassay, and DBS samples of infected women were used to quantify HBV DNA and determine the genotype.

Results: The mean age of the participants was 25.1±6.0 years, and most were housewives or farmers (83.7%) in their 20s (58.4%). Almost half of the participants (54.8%) reported having heard of HBV infection, and among them, 76.3% knew that HBV could be transmitted from an infected mother to her child. However, the large majority (97.5%) had never received any HBV vaccine dose. HBV prevalence was 6.5% (95% CI: 5.4-7.8%), and all HBV-positive pregnant women were unaware of their infection, although 66.9% had been pregnant before and received antenatal care. Alanine aminotransferase (ALT) ranged from 0 to 145 IU/L, with a median of 21.6 IU/L. The prevalence of HBeAg among HBsAg-positive pregnant women was 22.1% and was highest in the 20-29 age group (28.8%). The median HBV DNA level was 231,236.3 IU/mL in HBeAg-positive women and was significantly higher than in HBeAg-negative women (median=9,512.4 IU/mL, Mann-Whitney u test $p<0.001$). Amplification of the HBV genome surface/polymerase region revealed that the predominant genotypes were E (65.0%) and A (35%), with no association with HBeAg positivity (Fischer's exact test $p=0.58$).

Conclusions: In Burkina Faso, HBV prevalence in pregnant women is intermediate, and a quarter of HBV-infected pregnant women were positive for HBeAg. This suggests that one out of four pregnant women infected with HBV are eligible for antiviral prophylaxis to prevent MTCT, as recommended by the World Health Organization. Therefore, implementing routine HBV screening for all pregnant women attending antenatal clinics with linkage to prevention is essential to reduce the burden of HBV infection.

5

Hepatitis Delta Virus Co/Super-Infection Surveillance among Clinicians: An Often-Neglected Practice in Nigeria

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Background: Hepatitis Delta Virus (HDV) is a defective virus that requires Hepatitis B surface antigen to establish the most severe forms of viral hepatitis, with a higher risk of rapid progression to hepatocellular carcinoma (HCC). Nigeria is a hyperendemic region for Hepatitis B Virus (HBV), and has continued to have a substantial burden of HBV induced liver cirrhosis and HCC. However, HDV surveillance is suboptimal due to practically non-existent HDV screening in clinical settings in Nigeria, even though a national guideline exists. We conducted a survey among medical practitioners in Nigeria to evaluate HDV awareness and surveillance practices.

Methods: A group of clinicians and researchers at Enlightenment Initiatives on Viral Hepatitis in Nigeria (EIVN) and Federal Teaching Hospital Katsina, Nigeria designed a 20-question survey. The survey inquired about HDV awareness and approach to screening practices by medical practitioners, including among other questions if chronic hepatitis B (CHB) and at-risk HCC patients were screened for HDV, and the treatment regimen followed. The survey was anonymous and distributed through online messaging platforms to individual doctors and doctors' fora across Nigeria in the month of June 2022. At the end of the survey, the responses were collated and analyzed.

Results: Of the 198 responses received, 148 (75%) were males. The median age of the respondents was 38 years (IQR 35-42). Among the respondents, 135 (68%) were specialists, while others were 21 (11%) residents and 42 (21%) general practitioners. Sixty one percent of the specialists were trained either in gastroenterology/hepatology or infectious disease. About 54% of respondents have more than 10 years of practice experience, and 75% practice at public tertiary hospitals. Although over 90% (177) of respondents reported being aware of HDV and its screening modalities, still 94% (166) do not screen for HDV in HBV patients, even in those with severe disease. The majority (57%) of the respondent pointed out that unavailability of screening materials in their facility was the reason for not screening. While 34% were not aware of any screening tests for HDV, only about 9% reported financial constraints and other factors to be the reasons for not screening. Overall, 95% of respondents have never managed HDV infection, while the remaining 5% used Pegylated interferon in its management.

Conclusion: Our study sheds light on HDV screening practices among clinicians in Nigeria, revealing that most respondents, although aware of HDV infection, still do not screen for it. Thus, creating a huge knowledge gap on HDV burden in CHB patients. Therefore, further studies will be beneficial to explore the burden of HDV burden infection in Nigeria.

6

Séroprévalence du virus de l'hépatite D (VHD) chez des patients porteurs chroniques de l'antigène HBs du virus de l'hépatite B (VHB) à Abidjan de janvier 2017 à Aout 2021 (COTE-D'IVOIRE)

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Objectif: Déterminer la séroprévalence de l'infection par le VHD dans une cohorte de patients porteurs chroniques de l'AgHBs du VHB à Abidjan (CI).

Matériels et méthodes: Cette étude transversale rétrospective mono-centrique a concerné des patients infectés par le VHB au CIRBA durant la période de janvier 2017 à Aout 2021. La population étudiée était constituée de n = 130 porteurs chroniques du VHB venus pour le diagnostic du VHD au Centre Intégré de Recherches Biocliniques d'Abidjan (CIRBA). Les analyses biologiques ont concerné la recherche de l'anticorps VHD (Anti-VHD) par le test Dia-sorin VHD sur l'Evolis Twin Plus de la firme Bio-Rad; la quantification de l'ADN VHB avec le test Cobas®Ampliprep/ Cobas®TaqMan®HBV Test, V2.0 (Roche Diagnostics GmbH, Allemagne) de la quantification l'AgHBs du VHB grâce test Elecsys HBsAg II quant II (Roche Diagnostics GmbH, Allemagne) selon les indications du fabriquant.

Résultats: sur 130 porteurs chroniques à l'AgHBs du VHB venus au CIRBA, 7,69 % (n = 10) étaient positifs à l'anticorps VHD (Anti-VHD) dont trois (n = 3 ; 30%) femme et sept (n = 7 ; 70%) hommes. La moyenne d'âge des patients co-infectés VHD-VHB était de 45 ans. Ces patients avaient une CVVHB médiane de 8310 UI/mL avec un intervalle de (20 ; 16600) et le titre d'antigène AgHBs quantitatif médian était de 32725 UI/mL.

Conclusion: La séroprévalence de l'anti-VHD était estimé à 7,69% chez les porteurs chroniques de l'AgHBs au CIRBA. Cette étude a confirmé la présence de l'anti-VHD chez des patients porteurs inactifs de l'AgHBs du VHB à risque de développer une cirrhose en Côte-d'Ivoire.

7

Hepatitis C Laboratory Data Analysis on Patients Seeking Medical Attention in the Public Health Sector, South Africa, 2017-2021

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Background: There is no active national surveillance for the hepatitis C virus (HCV) in South Africa. The notifiable medical conditions (NMC) surveillance monitors HCV infections passively using mostly laboratory data and only few clinical notifications. Laboratory data as a source of information can help to estimate the prevalence of HCV amongst patients who seek medical attention in healthcare facilities. National Health Laboratory Service (NHLS) data for HCV was analysed to understand the testing pattern for HCV and the demographic distribution of the disease from 2017 to 2021.

Methods: HCV data was extracted from the NHLS central data warehouse (CDW). Data from all nine provinces of South Africa was included in the study. Hepatitis C laboratory data from studies and quality assurance programmes were excluded from the analysis. De-duplication of data was performed to remove test results from duplicate unique identifier records (StataCorp, 2015 v14. College Station, TX). Patients were considered exposed to HCV if they were positive for antibodies to HCV (anti-HCV). Patients positive on HCV nucleic acid tests were considered viremic with active infection. Anti-HCV positivity rate was calculated as the percentage of anti-HCV positive cases over the total number of cases tested for anti-HCV. The prevalence rate of HCV infection was calculated as the number of cases who tested anti-HCV positive × 100,000 / the population estimate. The demographic analysis was based on age, gender, province, or district. HCV genotyping data described the genotype circulation in South Africa.

Results: The anti-HCV positivity rate from 2017 to 2021 was 2.28% from 101 351 records of patients tested for anti-HCV. Gauteng province and Limpopo province had anti- HCV positivity rates above 2% over the five years. The anti-HCV prevalence was high in the metros. The overall prevalence for South Africa was 5/100 000 population. Peak age distribution in males was 20-29 years and in females 30-39 years of age. While genotype 1b was prevalent in KwaZulu-Natal, genotypes 1a, 3a and 5a were observed in Eastern Cape and genotypes 1a, 1b, 3a, 4c/d and 5a were seen in Gauteng. In Western Cape, all genotypes, including genotype 2, and a detection of genotype 7 in 2019 was observed. A high proportion of anti-HCV positive records could not be linked to a HCV nucleic acid test.

Conclusion: NHLS laboratory data can be used for surveillance to estimate hepatitis C exposure and prevalence in patients seeking health care in the public sector. In order to build our cascade to care and treatment, there is a dire need to follow up on anti-HCV positive patients with HCV nucleic acid tests. Monitoring HCV data can be used to improve on screening and treatment in support of the viral hepatitis elimination goal targeted for 2030.

8

Performance-Based Approach to Accelerate Hepatitis C Elimination in Rwanda

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Using performance-based approach (imihigo) to drive hepatitis C elimination agenda in Rwanda
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Background: In 2018, the government of Rwanda launched a plan to eliminating viral hepatitis C as a public health threat. Based on WHO guidance, this requires screening of 7 million people in Rwanda, aged 15 years and above and treat at least 80% of positive patients
Following this commitment, the country has launched series of mass screening in the general population. "Imihigo" is a performance-based management approach used to monitor the implementation of key government priorities in Rwanda. The government of Rwanda through the Ministry of local government (MINALOC) utilized this approach to enhance the implementation of the Hepatitis C screening across the country. In January 2020, HCV elimination was added on the list of national targets evaluated under the performance-based management "Imihigo". This abstract summarizes the effect of using imihigo to drive the hepatitis C elimination agenda.

Methods: Following the adoption of HCV elimination in the performance based annual reports, RBC/MOH signed a performance agreement with each district mayor. Targets were set per district and diagnostic and treatment commodities were distributed at all health facilities. The performance-based initiative was set for 2 years (2020-2022) and targets were set based on the eligible population to be screened per district. Case finding strategies included community sensitization and mass screening campaigns in public places were launched. The number of people screened per day was reported and aggregated figure was shared with the central level. The proportion of the population screened before and after the inclusion of hepatitis testing in Imihigo was evaluated.

Results: Since 2015, RBC/MOH has been conducted screening campaigns for hepatitis C using both targeted screening in high-risk groups such as people living with HIV, prisoners, genocide survivors, and the general population and facilities. These series of screening produced a total of 1.5 million (21% of elimination target) people screened by the end of 2019. Following the inclusion of hepatitis C screening in performance-based screening "Imihigo" a total of 3 million (42% of elimination target),1.5 million (21% of elimination target), and 0.8 million (12% of elimination target) were screened in 2020, 2021 and 2022 respectively despite the effect of the COVID-19 pandemic. Presently, 96% of the hepatitis C screening target has been achieved with 75% performed in less than two and half years following the inclusion of hepatitis C in Imihigo targets.

Conclusion: Hepatitis elimination requires a multi sectoral approach. Beyond the Ministry of health, countries should leverage other institutions that play important roles in the community in case finding and linkage to care. The inclusion of hepatitis C screening in the imihigo performance targets led by the Ministry of local Governance in Rwanda was instrumental to accelerate screening activities across the country within a short time period which has put Rwanda on track to achieving HCV elimination

9

Prevalence and Mortality Trends of Hepatitis B and Hepatitis C Infection in Sub-Saharan Africa: A Systematic Analysis for the Global Burden of Disease Study 2020

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Background: The burden of hepatitis B virus (HBV) and hepatitis C virus (HCV) infection is rising in sub-Saharan Africa (SSA) with substantial geographic variation in levels and trends of the disease across the continent. Understanding these variations is crucial in assessing progress and barriers towards achieving the WHO's Viral Hepatitis Elimination Goals, and guiding strategic planning and policymaking to curb the epidemic in this region. We report the national and regional prevalence and mortality trends of HBV and HCV in SSA estimated as part of the Global Burden of Diseases, Injuries, and Risk Factors Study 2020.

Methods: The primary data sources for this analysis included population-based serosurveys, household surveys, claims and hospital discharges, cancer registries, vital registrations, and published case series. We did a mixed-effects meta-analysis to estimate prevalence and mortality of chronic HBV and HCV infection, as well as the total burden of HBV- and HCV-related diseases, as defined by the aggregate of acute hepatitis infection, liver cancer, and cirrhosis.

Results: In 2020, an estimated 74.5 million (95% uncertainty interval 68.3 to 81.5) people had chronic HBV infection and 28.9 million (23.6 to 35.3) people had chronic HCV infection in SSA, corresponding to all-age prevalence of 6.7% (6.1 to 7.3) and 2.6% (2.1 to 3.2), respectively. The regional all-age prevalence of chronic HBV and HCV infection decreased by 39.0% and 19.7% between 1990 and 2020, respectively. Somalia (14.0% [12.8 to 15.4]), Chad (11.7% [9.4 to 13.9]) and Angola (11.5% [10.4 to 12.8]) had the highest prevalence of chronic HBV infection while Gabon (4.3% [3.5 to 5.2]), Democratic Republic of the Congo (3.8% [3.1 to 4.7]) and Ghana (3.5% [2.9 to 4.3]) had the highest prevalence of chronic HCV infection. The lowest all-age prevalence of chronic HBV infection was in South Africa (1.0% [0.9 to 1.1]) and Burundi (2.0% [1.7 to 2.3]), and that of chronic HCV infection was in Madagascar (1.3 [1.0 to 1.5]) and Mozambique (1.4% [1.1 to 1.7]). In 2020, HBV-related diseases resulted in 92,610 [77,071 to 109,496] deaths and HCV-related diseases resulted in 61,670 [50,435 to 75,071] deaths in SSA. Four countries (Nigeria, Ethiopia, Democratic Republic of the Congo, and Kenya) accounted for about 40% deaths attributable to HBV- and HCV-related diseases. As of 2020, no countries in SSA met the WHO Interim Guidance provisional targets of 1) no more than 0.1% HBsAg seroprevalence in children younger than 5 years, 2) no more than 5 per 100,000 persons of annual HCV incidence, and 3) all-age HBV- and HCV-related mortality rates of less than or equal to four and two deaths per year, respectively.

Conclusion: All-age prevalence and mortality of HBV and HCV infection declined over time. However, none of the SSA countries have met the WHO interim targets for elimination of mother-to-child transmission of HBV, HCV incidence, and HBV/HCV mortality as of 2020. Continued efforts to integrate, distribute, and scale up targeted hepatitis intervention services is crucial in curbing the epidemic in SSA.

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Trends of Hepatitis-Associated Cirrhosis and Liver Cancer in Sub-Saharan Africa: A Systematic Analysis of the Global Burden of Diseases and Injuries Study 2020 (Gbd 2020)

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Background: Chronic infection of hepatitis B virus (HBV) and hepatitis C virus (HCV) is the leading cause of liver-related morbidity and mortality worldwide. The rising burden of chronic HBV and HCV infection in sub-Saharan Africa (SSA) warrants a further understanding of the current levels and trends of hepatitis-related liver diseases in this region. As part of the GBD 2020, we provide the most up-to-date prevalence and mortality estimates of cirrhosis and other chronic liver diseases ("cirrhosis") and liver cancer attributable to HBV and HCV in SSA.

Methods: The primary data sources for this analysis were population-based serosurveys, claims and hospital discharges, cancer registries, vital registrations, and published case series. We used mixed-effects meta-regression models to estimate prevalence, mortality, and aetiological proportions of cirrhosis and liver cancer. For liver cancer burden estimation, specifically, prevalence was estimated using mortality-to-incidence ratio that was modeled using spatiotemporal Gaussian process regression as surrogate for survival.

Results: In 2020, HBV accounted for 34.6% (75.2 million [95% UI 68.6 to 80.9]) of total cirrhosis cases and 34.7% (18,552 [14,211 to 23,525]) of liver cancer cases in SSA while HCV accounted for 13.1% (28.6 million [23.1 to 35.5]) and 15.7% (8,389 [5,993 to 12,201]), respectively. The number of cirrhosis and liver cancer deaths attributable to hepatitis in this region almost doubled from 88,771 (76,650 to 104,612) in 1990 to 144,154 (125,392 to 165,226) in 2020, with about 34% of deaths concentrating in Nigeria, Democratic Republic of the Congo and Ethiopia. All-age prevalence of HBV-related cirrhosis ranged from 14.0% (12.7 to 15.4) in Somalia to 1.0% (0.9 to 1.1) in South Africa in 2020. All-age prevalence of HCV-related cirrhosis ranged from 4.2% (3.4 to 5.2) in Gabon to 1.3 (1.0 to 1.5) in Madagascar. Likewise, all-age prevalence of HBV-related liver cancer ranged from 10.1 per 100,000 persons (6.4 to 15.1) in Gambia to 0.4 per 100,000 persons (0.3 to 0.7) in Ethiopia. All-age prevalence of HCV-related liver cancer ranged from 2.6 per 100,000 persons (1.4 to 4.9) in Gabon to 0.2 per 100,000 persons (0.1 to 0.3) in Sao Tome and Principe. The majority of countries in SSA shared a greater burden of cirrhosis and liver cancer attributable to HBV than HCV. Only Burundi and South Africa had a greater proportion of people with cirrhosis due to HCV than HBV, and four countries (Angola, Congo, Gabon, and Democratic Republic of the Congo) had a greater proportion of people with liver cancer due to HCV than HBV.

Conclusion: Our analysis shows that the burden of hepatitis-related cirrhosis and liver cancer is rapidly increasing in many parts of SSA, highlighting the importance of scaling up prevention and treatment services to eliminate viral hepatitis. Continued efforts to promote primary data collection are crucial to produce robust disease burden estimates that guide effective policy and planning to reduce the overall burden of end-stage liver diseases attributable to hepatitis in SSA.

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An Assessment of Metabolic Syndrome and Cardiovascular Risk Scores Among Patients With Non-alcoholic Fatty Liver Disease (NAFLD) at the Cape Coast Teaching Hospital, Ghana

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Non-alcoholic fatty liver disease (NAFLD) has been suggested as the liver component of metabolic syndrome. Despite a wealth of scientific evidence directly linking NAFLD with increased risk of morbidity and mortality from cardiovascular disease, there remains a dearth of scientific scholarship about the condition in the West African sub-region. The few attempts made have typically assessed the prevalence of NAFLD, but this study was the first known attempt to assess the cardiovascular risk scores of patients with NAFLD in the sub-region. It measured the prevalence of NAFLD, assessed its association with metabolic syndrome, and compared cardiovascular risk scores between patients with NAFLD and those without. among patients attending medical clinics at the Cape Coast Teaching Hospital (CCTH), Cape Coast, Ghana.

A consecutive sampling approach was employed in recruiting 210 patients (58 males and 152 females) attending medical clinics at the Cape Coast Teaching Hospital, Ghana, over a 10-month period. A structured questionnaire was used to collect demographic data, medical and alcohol history. Blood pressure and anthropometric measurements were taken. Abdominal ultrasonography was done to identify sonographic evidence of fatty liver. Blood samples were analysed for lipids, glucose, transaminases and hepatitis viral screens. Student t-tests were used to compare means whilst the Fischer's exact test and the Pearson's correlation test were used to test for associations between variables at a significance level of .05. A median age of the patients sampled was 54 years. The mean BMI of patients with sonographic evidence of NAFLD was significantly higher (M=33, SD=9.3) than those without evidence of fatty liver (M=26.8, SD=7.3), p<.001. Patients with NAFLD had a significantly higher mean waist-to-hip ratio (M=0.93, SD=.06) than those without (M=0.89, SD=.13), p=.027. The associations between NAFLD and metabolic syndrome was significant for females (p=0.001), but not for males. A weak positive correlation between NAFLD and metabolic syndrome was found (r=.286, p=<.0001). Of the participants aged 40 – 79 years with NAFLD (N=48), 58.3 % had 10-year cardiovascular risk scores > 10% (moderately high and high risk) and 16.7% had risk scores > 20% (high risk). A comparison of the means of 10-year risk scores for these patients however revealed that the difference was not statistically significant (M=13.35 SD=10.35), t=.634, p=.527.

The study concluded that NAFLD in this patient sample is associated with increasing age, BMI, waist circumference, waist-to-hip ratio and metabolic syndrome. Patients with NAFLD at CCTH have higher mean cardiovascular risk scores than those without NAFLD but the difference is not statistically significant.

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Long-Term Follow-up in Liver Transplant Recipients: First Local Experience.

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Background: Long-term follow-up of the liver transplant recipient is important for patient and graft survival. Long-term immunosuppression lead to: high blood pressure(HBP), diabetes, renal dysfunction and malignancies.
Aim: to evaluate the long-term complications of our liver transplant recipients and the beyond 5 years survival rate.

Methods: It's a retrospective study including liver transplant recipients. We analyzed the clinical features: graft type(living donor liver transplantation(LDLT) or deceased donor liver transplantation(DDLT)) and liver disease etiology. Follow-up beyond 3 months included searching for primary disease recurrence: viral hepatitis suspected on biological(HBV-DNA, HCV-RNA) and histological criteria, dysimmune liver diseases(primary biliary cholangitis(PBC), auto-immune hepatitis(AIH), primary sclerosing cholangitis(PSC)) suspected on morphological and histological criteria, hepatocellular carcinoma(HCC) on alpha-fetoprotein(AFP) elevation and imaging. Rejection is suspected in the presence of liver test abnormalities in immediate postoperative period(<3months) and confirmed by liver biopsy. Acute rejection is graded according to Banff score and chronic rejection is identified by the vanishing bile duct syndrome. Biliary complications diagnosis is based on clinical and morphological criteria(magnetic resonance cholangiography). Infections was diagnosed according to the context, on clinical and biological criteria(CMV Antigenemia and PCR, Search for aspergillosis, cryptosporidiosis, tuberculosis, PCR Covid-19). Diagnosis for metabolic abnormalities: diabetes, HBP and dyslipidemia was established according to IDF criteria and chronic renal impairment(CRI) was graded according to KDIGO. The search for malignancies included: annual dermatological examination, tumor markers and morphological examinations depending on the context(ENT(ear, nose and throat)examination, endoscopy, computed tomography, magnetic resonance imaging). For statistical analysis we used SPSS-20 software to calculate qualitative and quantitative variables and Kaplan Meier method for survival curves.

Results: From April 1st 2003 to August 31th 2021, 96 patients were enrolled, 60 men and 36 women(sex ratio M/W=1.66). They had the following graft types: LDLT(n=84) , DDLT(n=9) and combined liver-kidney transplantation(n=3) . Etiology of liver disease: dysimmune liver diseases(n=26) , viral hepatitis(n=17), Budd Chiari Syndrom(BCS)(n=11) , cryptogenetic cirrhosis(CC)(n=10) , HCC(n=8), alcoholic cirrhosis(n=6) , non-alcoholic-steato-hepatitis(NASH)(n=4) , others: Wilson's disease(n=3), Caroli(n=2), PFIC(n=2) , secondary biliary cirrhosis(n=2) , oxalose(n=2) , DILI-ACLF(n=1) , HNR(n=1) , biliary atresia(n=1) .
The postoperative mortality rate(<3months) was 15.6%(n=15) . Long-term follow-up concerned 81 patients with a mean follow-up duration of 78.9 months[6-384], primary disease recurrence was diagnosed in 16%(n=13): HCV(n=5), AIH(n=3) , CC(n=2) , PBC(n=1) , PSC(n=1) , BCS(n=1), no HCC recurrence was observed. According to Banff classification: acute rejection was observed in 2 patients; chronic rejection in one case and humoral rejection in one case. Biliary complications occured in 12 cases(12.5%)(LDLT n=10, DDLT n=2). Metabolic complications were as follows: 27% HBP(n=22), 26% diabetes(n=21), 8.6% hyperlipemia(n=7) and 33% CRI(n=27): stage 3(n=21), stage 4(n=5) and stage 5(n=1). 23.4%(n=19) had infections: Covid-19(n=15), CMV(n=1), Aspergillosis(n=1), tuberculosis(n=1) and Ramsay Hunt syndrome(n=1) . 4 patients had cancer(4.9%): colorectal adenocarcinoma(n=1), cholangiocarcinoma(n=1), cerebral cancer(n=1), cavum

cancer(n=1). During long-term follow-up 20.9% of patients died(n=17). The 5- and 10-year survival rate was 74 and 69%, respectively.

Conclusion: The follow-up of the transplant patient requires a formalized and multidisciplinary approach in order to spot early and late complications. Our survival rates are comparable to those in published literature.

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Impact of Acute Kidney Injury on the Outcome of Patients Hospitalized for Complications of Cirrhosis

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Background: Acute kidney injury (AKI) is one of the most serious complications of end-stage liver disease, with the highest short-term mortality seen in stage 3 AKI. We aimed to asses outcome of in-hospital AKI for 300 patients admitted for complications of cirrhosis and predictors of this outcome

Methods: Clinical characteristics, biochemical parameters including serum creatinine levels at various time intervals, and mortality data (in-hospital and 90 day) were recorded. Data were analyzed to identify independent predictors of mortality and cause of AKI.

Results: AKI associated with sepsis (45%) was the most common cause followed by hypovolemia (31.3%), Hepatorenal syndrome (HRS) (23%) and contrast induced nephropathy (0.7%). 48.7% of AKI patients showed complete recovery of renal function while 7.3% showed partial recovery and 44% showed no recovery of renal function. The in-hospital mortality and 90-day were 40.7% and 69.7% respectively. Sepsis was associated with the highest in-hospital mortality (52.2%) followed by HRS (28.7) and hypovolemia (18.9%). Those admitted in ICU with child Paugh C and MELD> 15 and AKI stage 3 had the worst survival. Cox regression analysis showed that ICU admission, AKI stage, HCC, child Paugh and hyponatremia were independent predictors of 90-day mortality. Progression of renal dysfunction is independently associated with mortality.

Conclusion: The results of the current study confirm that acute kidney injury, as defined by International Club of Ascites, is associated with high 90-day mortality.

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"Healthcare Workers Preference on Characteristics of Rapid Diagnostic Tests to Identify Women Infected With Hepatitis B Virus Who Are Eligible for Peripartum Antiviral Prophylaxis in Resource-Limited Settings"

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Background: Hepatitis B virus (HBV) infection represents a major disease burden in global health, especially in Africa where an estimated 6.2% of people live with chronic HBV infection. The continent's limited access to hepatitis B vaccines, diagnostic and therapeutic services is a major challenge to achieving WHO elimination targets by 2030. The WHO recommends infant immunoprophylaxis and antiviral prophylaxis to high risk pregnant women to prevent mother-to-child transmission (MTCT) which is the major route of transmission. RT-PCR, the test used to identify high risk women is not easily accessible in Africa given its logistical requirements and high cost. Where RT-PCR is not available, HBeAg is recommended for use by WHO albeit it has lower clinical sensitivity and specificity. We used a discrete choice experiment (DCE) to elicit the preferences of healthcare workers (HCW) in Africa on the characteristics of a potential rapid diagnostic test (RDT) to identify high risk pregnant women that could benefit from antiviral prophylaxis to prevent MTCT.

Methods: All types of HCWs in Africa were invited to participate in the study by answering a self-administered online questionnaire. Respondents were asked to make a trade-off between two fictional RDTs and then decide whether they would choose RT-PCR over this test in seven hypothetical scenarios. The choice tasks included different levels of four attributes: Price of test borne by women, time to result, sensitivity and specificity. We used the mixed multinomial logit to study the utility gain or loss generated by each attribute. The target product profile

(TPP) was derived using set minimal and optimal predictive acceptance of a RDT compared to PCR.

Results: Out of the 514 respondents, 55.5% were males, 71.4% aged 30-50 years, 61.7% were doctors, 27.4% work in National hospitals and 68.7% work in west Africa and 66.2% are involved in hepatitis care or control programs. Two attributes had positive significant utilities: sensitivity (β=0.272), specificity (β=0.138) while the other two attributes levels generated disutility: Cost (β= − 0.164), and time to result (average β= − 0.162). Doctors preferred highly sensitive tests, public health practitioners were more concerned about the cost while midwives tend to pick tests with faster time to results.The minimally acceptable test sensitivity would be 81.5% and the optimally acceptable sensitivity would be 86.5%, respectively, for a RDT with 95% specificity, at US$ 1, and time to result of 20 minutes.

Conclusion: We found that HCWs in Africa prefer a RDT with higher sensitivity and lower cost, followed by higher specificity and faster time to result. These findings could guide the development of RDTs that can be used in resource limited settings to identify high-risk pregnant women to reduce MTCT, HBV related mortality and help to achieve elimination targets.

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Strategic Approaches to Implementing HCV Elimination in Low Resource Settings Using Nasarawa State Nigeria: A Case Study

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Background: Despite global advancements in hepatitis C (HCV) testing and treatment, minimal progress to democratize treatment access has been recorded in Africa, where an estimated burden of 10M people live with HCV, with only 5% diagnosed as of 2019. Substantial gaps remain in treatment volumes, in part due to minimal supply-side interventions and limited government commitment. In line with global guidance, Clinton Health Access Initiative (CHAI) supported the Government of Nigeria to develop the necessary policy framework to build HCV "test and treat" programs and further domesticated this framework in Nasarawa State. Nasarawa is estimated to have an HCV seroprevalence of 14%, significantly higher than the estimated average national seroprevalence of 1.1%. To address the high burden, in 2020, the Nasarawa State Government committed to a 5-year HCV Elimination plan aimed at screening not less than 2.4M persons and placing an estimated 141K chronically infected persons on treatment. A Viral Hepatitis Technical Working Group (TWG) was instituted to develop the implementation framework and strategy. This abstract aims to describe strategic approaches used in the Nasarawa HCV Elimination program to drive testing and treatment volumes to date.

Methods: Given the low resource setting in Nasarawa, a stepwise methodology was employed. The TWG was divided into 4 sub-committees to cover the major programmatic/thematic areas: Service Delivery, Prevention and Awareness Creation, and Logistics and Supply Chain, with a Resource Mobilization sub-committee responsible for identifying partnership and collaboration opportunities while engaging the government to secure funding. The elimination framework was developed having a four-pronged approach: plan wisely, test smart, cure-all, and prevent new cases. The key focus of this approach was to identify high-yield opportunities to enhance program implementation. Outcomes from the above necessitated a focus on HIV patients considering the high burden and leveraging the existing framework to accelerate access to HCV services. The rollout followed a two-pronged approach, prioritizing enrolled HIV patients across secondary healthcare centers for the initial screening and a regional strategy for linkage to diagnostic and treatment services for seropositive patients. Healthcare workers were trained and supported with the required reporting tools.

Results: Exploring a patient-centered approach, HCV services were integrated into HIV services across the cascade of care to drive screening, viral load testing, and treatment initiations. A total of 13 secondary health facilities currently provide HCV screening, with 6 facilities prioritized for diagnostic testing and treatment. Through this approach, as of June 2022, a total of 13,206 persons have been screened, 610 anti-HCV positive individuals accessed HCV viral load testing, and 334 individuals with chronic HCV initiated

treatment. Currently, using WHO programmatic targets, micro-elimination has been achieved in 2 facilities through the diagnosis of ≥90% of enrolled PLHIVs and ≥80% placed on treatment.

Conclusions: In resource-limited settings with limited donor support, viral hepatitis elimination is feasible with government commitment, effective planning, and the establishment of a data-driven micro-elimination strategy.

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Endoscopic Management of Post-liver Transplant Strictures: A Retrospective Study From Tertiary Centre in Algeria

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Background: Biliary strictures (BS)constitute 30 % of the biliary complications after liver transplantation(LT). They are more common after living donor related liver transplantation (LDLT) than deceased liver transplantation (DDLT). BS is the most common challenges complications of LT and constitute an important cause of morbidity and mortality. Endoscopic retrograde cholangiopancreatography (ERCP) is a safe and effective treatment modality for post-transplant BS.
Aims:To evaluate retrospectively the outcomes of endoscopic treatment (ET) in post LT biliary strictures.

Methods: We retrospectively reviewed our patient database of the Liver Transplantation Unit, Patients who underwent ERCP for BS were included in our study cohort. Clinical data included patient demographics,indication for LT, for BS (the mode of presentation, number, time to BS after LT and classification), for ERCP (indication, number of ERCP procedures,morbidity), and treatment outcomes, including need for percutaneous and surgical interventions

Results: between February 2003 and June 2022, out of 96 LT, biliary strictures developed in 15(15.6%) patients during the period of follow up. Of these 15 patients:13 had LDLT and 2 DDLT. The biliary anastomosis was duct-to-duct in all patients. The median age was 48 years [range 20–64 years] and uncluded 11 males and 4 females [sex ratio:2.7]. All BS developed within the first year after LT. The median time from LT to the detection of the BS was <3 months in 40% of cases (6 patients) and >3 months in 60% of cases.The mode of presentation was cholangitis in 5 patients (33 %), asymptomatic with elevation of liver enzymes or jaundice in ten patients (77 %). At magnetic resonance cholangiography :14 patients had isolated and short SB ,and in one cases SB was isolated but long and angulated. ERCP was attempted as initial therapy in all patients:14 were managed entirely by ET, and one required a combined percutaneous and endoscopic approach.35 ERCP sessions were performed in these patients with a median of 2.3 [2–7] sessions per patient. In 26 % of cases (4 patients), BS was very tight , the guide wire cannot cross the stricture and they were referred for the chirurgie .Successful stent placement was achieved in 11 patients (74 %) ,and treatment was achieved in 9 patients (60%) : SB resolved in 5 patients (43%, while 4 (36%) were referred for hepaticojejunostomy because of continued structuring despite ET , and 2 are under treatment . The number of sessions of ERCP per patients to obtain the resolution of SB was :1 /(n=3), 2 /(n=1), 03/(n=1).
The median follow up time after stent removal in our study was 20 months [06- 70] : patients with SB resolved (n=5) are asymptomatic and no recurrence of BS . Also patients in failure of ET (n=8) ,5 underwent hepaticojejunostomy , and are asymptomatic. We have 6 mild complications related to ERCP: pancreatitis (n=3) and cholangitis (n=3) , and no moratlity.

Conclusions: Post-LD biliary strictures can be successfully treated with ERCP with satisfactory resolution, but half of patients were resistant to endoscopic therapy and subsequently required surgical intervention

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THE IMPACT OF THE PANDEMIC ON SCREENING AND HEALTH INTERVENTION ACTIVITIES BY YOUNG HEALTH PROFESSIONALS

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COVID-19 pandemic became a global health threat not only because of its striking infectiousness and associated mortality, but also the disruption of public health systems and the meltdown of national economies. In the wake of the pandemic, other public health concerns became secondary and the primary focus of all authorities and researchers was on eliminating the virus, with little or no effort in meeting the elimination targets of some infectious diseases that were on the course before COVID outbreak.

It is on record that viral hepatitis claims about 4,000 lives every day and affects 325 million people worldwide. The death toll comes closely behind Tuberculosis and surpasses that of Human Immunodeficiency Virus and Malaria combined. The World Health Assembly, in 2016, set a goal to eliminate viral hepatitis with a reduction target in hepatitis-related deaths by 65% and new chronic HBV and HCV infections by 90%, by 2030. However, the 2019 pandemic outbreak disrupted the existent systems by governments and Civil Society Organizations (CSOs) to actualize these goals, consequently hampering early diagnosis and linkage to care for this infection. In Nigeria, Civil Society Organizations and volunteer groups could not reach communities, particularly the underserved populations, which include Internally displaced people, drug addicts, persons in prisons and those living in rural areas.

Civil Society involvement is important in hepatitis response and national elimination plan implementation because they are at the forefront of supporting innovations aimed at tackling today's global public health challenges. For their community-based projects, it is worthy to mention that young health professionals, make up the bulk of healthcare personnel that readily avail themselves. During the pandemic, the increased transmission rate and associated morbidity over-stretched the already understaffed medical facilities. Logistics was impeded as screening equipment and medications were difficult to reach the users. Thereafter, hepatitis screening and other interventions were grounded due to the unavailable or the inadequate number of healthcare practitioners to deal with emergencies at hospitals and health centres. Asides from the psychosocial impacts of the pandemic and mental weariness that accompany their services, young professionals also suffered fear, stigma, insecurity and uncertainty regarding the possibility of spreading the virus to their families and friends, before the availability of vaccines.

Hepatitis is a global health concern that transcends national boundaries and the stagnancy in the global elimination effort during the pandemic demands innovative approaches if the 2030 goal will be met. How the governments swiftly mobilized resources and set policies to combat COVID-19 is a pointer that all hopes are not lost regarding viral hepatitis. The situation can be salvaged. Though the huge shortage of healthcare practitioners, imbalanced skill mix and uneven geographical distribution of health workers are serious threats to our vision, a decentralized task-sharing service, efficient procurement and supply management of medicines and diagnostics, making viral hepatitis prevention, vaccination, testing and treatment part of Universal Health Coverage (UHC) programmes, among other strategies to strengthen linkage from testing to care, treatment and prevention can be deployed to achieve our desired goal.

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Hepatitis D Seroprevalence in People With Chronic Hepatitis B in Lubumbashi/ (DRC)

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Hepatitis B and D viruses are responsible for about 2 million deaths annually worldwide. In co-infection with

hepatitis B (HBV) and D (VHD) viruses, the prognosis for hepatitis B is exacerbated by HDV. This study aimed at estimating the seroprevalence of hepatitis D among blood donors at Cliniques universitaires and Hôpital Jason Sendwe in Lubumbashi. Screening for HBsAg was performed using rapid diagnostic tests and then confirmed by the Liaison XL test which was also used for screening for anti-HDV antibodies. Of 200 blood donors who tested positive for HBsAg, only four (2%) tested positive for anti-HDV antibodies. This study has the merit of highlighting, for the first time, HBV-HDV co-infection in Lubumbashi. Hepatitis D should be screened for in all HBsAg carriers with severe or chronic hepatitis in order to allow early management of these patients and thus avoid aggravation of liver disease. The limitations of this study are the lack of data on the course of liver disease, the genotype of HBV and HDV, the viral load of HDV and any current treatments.

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The Frequency and Pattern of Abnormal Liver Function Test Among Hospitalised SARS-COV2 Infection in Sudanese Patients from April 2020 to May 2021

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Background: and Aims: Coronavirus disease 2019 (COVID-19) caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) continues to spread rapidly across the world. Recent studies reported that patients with coronavirus disease-2019 (COVID-19) might have liver injury. Our aim is to study the frequency and pattern of abnormal liver function tests (LFTs) among hospitalized COVID-19 patients.

Methods: A multicenter retrospective study included 300 COVID-19 patients attended during the period from April 2020 to October 2021. Data regarding; demographics, comorbidities, managements, inflammatory markers, liver profile and outcomes were collected.

Results: Among 300 patients 197(65.7%) were males and 103(34.3%) were females, with mean age 66±13 years. The frequency of abnormal liver function tests was 15% (n= 45). The pattern of abnormal liver function tests is predominantly hepatocellular (32/45; 71.1%) and mixed (10/45; 22.3%). In liver profile; 45(15%) patients had hypoalbuminemia, 22(7.3%) had hyperbilirubinemia and 19(6.3%) had hyperproteinaemia. In enzymology, elevated AST, ALT, ALP and GGT found in 16.7%, 13.7%, 11% and 6.6%, respectively. The determinants of LFTs abnormalities were; severe COVID-19 infection (OR=10.6; 95%CI: 4.5-24.8; P= 0.000), hypertension (OR=2.8; 95%CI: 1.2-6.5; P= 0.017), DM (OR=2.2; 95%CI: 1.1-4.6; P= 0.021), CVD (OR=6.7; 95%CI: 3.2-14.0; P= 0.000) and renal diseases (OR=2.6; 95%CI: 1.2-5.7; P= 0.016). Also, LFTs abnormalities significantly increased the hazard of ICU admission (OR=11.7; 95%CI: 3.5-39.2; P. value= 0.000), intubation (OR=14.3; 95%CI: 6.1-33.6; P. value= 0.000), respiratory support (OR=6.6; 95%CI: 1.9-22.0; P. value= 0.001), length of hospital stays > 2 weeks (OR=4.4; 95%CI: 2.3-9.5; P. value= 0.001) and morality (OR=17.7; 95%CI: 8.2-38.5; P. value= 0.000).

Conclusion: The frequency of abnormal liver functions on admission was considerable and predominately as hepatocellular pattern. Patients with abnormal liver tests were at higher risk of progressing to severe disease, adverse in-hospital events, and worse outcome (death).

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Association Between Thrombocytopenia and the Severity of COVID-19 Infection Among Hospitalized Egyptian Patients.

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Background: COVID-19, which is caused by the corona virus 2 that causes severe acute respiratory syndrome, causes a respiratory and systemic illness that in 10-

15% of patients escalates to a severe form of pneumonia. Thrombocytopenia is frequent in COVID-19 patients. We aimed to evaluate the association between thrombocytopenia and the severity of COVID-19 infection in hospitalized patients.

Methods: A cross-sectional study was carried out on 800 Egyptian patients with confirmed covid-19 infection. They were divided into Group I (Mild): 200 symptomatic patients meeting the case definition for COVID-19 without radiological evidence of pneumonia or hypoxia. Group II (Moderate): 200 patients with clinical signs of non-severe pneumonia and radiological evidence of pneumonia. Group III (Severe): 200 patients with clinical signs of pneumonia plus: respiratory or lung dysfunction. Group IV: 200 critically ill patient in ICU: Acute respiratory distress syndrome (ARDS).

Results: there was a highly statistically significant difference between the studied groups regarding thrombocytopenia ($p<0.001$). Thrombocytopenia was statistically higher in severe and critically ill patients. In addition, a statistically significant difference found in outcome among the studied groups ($p<0.05$) {critically ill (40%), severe (17.5%)}. The most common cause of death was respiratory failure, which occurred in 28 severe patients (80%) and 65 critically ill patients (81.25%), followed by hemorrhage due to thrombocytopenia, which occurred in 7 severe patients (20%) and 15 critically ill patients, respectively (18.75%).

Conclusion: Platelet count is a simple, inexpensive, and readily available laboratory parameter that is frequently linked to severe covid-19 infection and a significant death risk.

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The Effect of Coronavirus Disease 2019 on Our Liver Recipients

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Background: The occurrence of coronavirus disease 2019 (COVID-19) on liver recipients (LR) is problematic due to immunosuppression (IS) and the absence of specific treatment. The aim of this study is to report the effect of the COVID-19 on our LR.

Methods: We collected clinical data from patients hospitalized or monitored in consultation (source of contamination, suggestive symptomatology, post liver transplantation metabolic syndrome (PLTSM) , vaccine for COVID-19 ; virological (systematic RT-PCR assay of the nasopharyngeal swab for the SARS-CoV-2); morphological (CT scan of the chest). Our country has experienced 3 waves (W): (W1=5/2020, W2= 11/2020, W3= 7/2021). Patients were classified according to national recommendations in minimal (MID) moderate (MD) or severe disease (SD). MID treatment included Azithromycin and Hydroxychloroquine (W1) , MD: oxygen therapy (O2 < 6 l/min target achieved SpO2 > 95%) if SpO2 < 92%, FR < 30 c/mn . In case of SD SpO2 < 92%, FR > 35 c /mn, dyspnea or target not achieved (Transfer to Pneumology or intensive care unit (ICU)). For MD and SD :Dexamethasone 0.2mg/kg/day IV for 10 days, IV antibiotic therapy (Cefotaxime 500: 3gr/24h or ciprofloxacin 400 mg/24h) for 10 days and anticoagulation by enoxaparin sodium or Tinzaparine en subcutaneous depending on weight and DFG . The dose of anticalcineurine (Cyclosporine or Tacrolimus)is systematically reduced by half and the MMF was stopped.

Results: 81 LR are followed in our department ,from 1/4/19 to 31/8/21. 18.5% (n=15) had an COVID-19 , They were 8 women and 7 men (sex ratio H/F=0.87), average age was 57.2 years [31-70]. The etiology of hepatopathy was NASH (n=4), HCV (n=3), dysimmune (n=3), others (n=5). LT type: LTLD= 11, LTDD = 4. IS was Tacrolimus+ MMF (n=12), Cyclodporine +MMF (n=3). The source of contamination was a family cluster in 93.3% of cases (n=14). Patients were infected in W1 (n=5), W2(n=3) and W3(n=7), re-infected W2W3 (n=1). The diagnosis was confirmed by a positive PCR RT in all cases (n=15), the percentage of pulmonary involvement was: > 50% n=6, 25-50% n=5 and < 10% n=2. The Covid-19 was MID (n=4), MD (n=6) and SD (n=5). 46.6% (n=7) had PLTSM et 46.6% (n=7) severe chronic kidney injury . 73.3 % (n= 11) showed a favourable outcom . 4 patients (NASH n =2, Dysimmunes n =2) died ; 3 of them had PLTSM. The time between the LT and COVID -19 was 48 , 38 , 32 ,and 12 months respectively. Infection occurred at

W1(n=1), W2 (n=1), W3 (n=2), respectively. Causes of death were: respiratory distress syndrome (n=3), CIVD (n=1). Only one patient was vaccinated with one dose.

Conclusion: The prevalence of COVID-19 in our LR is underestimated, due to absence of systematic screening. Intra-family contamination is predominantly source .MD and SD are common in our series , we also deplore the absence of vaccine.

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Fluoroquinolone-Resistant Strains in Cirrhotic Patients With Spontaneous Bacterial Peritonitis: Microbiological and Molecular Aspects

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Background: This study aimed to determine the causative bacterial agents of spontaneous bacterial peritonitis (SBP)
in patients with cirrhosis and to define antibiotic-resistance patterns in addition to identifying the genetic mutations in the
quinolone resistance determining regions (QRDRs).

Methods: Twenty milliliters of ascetic fluid was obtained from 51 patients with SBP. The antibiotic-sensitivity
patterns of different strains were determined by the Kirby–Bauer method. Extracted bacterial DNA was used to determine the
mutations in four different genes in QRDRs (gyrA, gyrB, parC, and parE) by sequencing after gene amplification by PCR.

Results: Gram-negative bacilli were detected in 60.7% of the patients. Escherichia coli was detected in 33.3% of the patients, and Staphylococcus aureus was detected in 21.6%. Gram-negative bacilli showed the best sensitivity to meropenem (90.3%), followed by amikacin (83.9%). Gram-positive cocci were sensitive to vancomycin and oxacillin at 90 and 80%, respectively. Fluoroquinolone resistance was detected in 27% of the bacterial strains. Mutations in the gyrA and parC genes were detected in quinolone-resistant strains (64.3 and 35.7%, respectively). Several mutations were found in the gyrA gene (Ser83Leu, Ser81Phe, and Ser-84Leu). Ser80Ile and Ser79Tyr mutations were detected in the parC gene. No mutation was detected in the parE gene.

Conclusion: Frequent use of antibiotics as prophylaxis against SBP leads to an increase in antibiotic resistance and changes the microbial pattern of causative agents. The gyrA gene mutation was the most common mutation detected in fluoroquinolone-resistant strains.

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Acute Kidney Injury in Patients with Liver Cirrhosis: Prevalence, Predictors, and In-Hospital Mortality at a District Hospital in Ghana

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Background: Acute kidney injury (AKI) is one of the most severe complications of cirrhosis and portends an ominous prognosis with an estimated mortality of about 50% in a month and 65% within a year. Infection and hypovolemia have been found to be the main precipitating factors of AKI in liver cirrhosis. Early detection and treatment of AKI may improve outcomes. AKI in patients with liver cirrhosis in Ghana and their impact on inpatient mortality are largely unknown. This study was aimed at determining the prevalence, precipitating factors, predictors, and in-hospital mortality of AKI in patients with liver cirrhosis admitted to a district hospital in Ghana.

Methods: Consecutive hospitalized patients with liver cirrhosis from 1 January 2018 to 30 April 2020 were recruited. Patient's demographic data and clinical features were collected using a standardized questionnaire. Biochemical and haematological tests as well as abdominal ultrasound scans were done for all patients. All patients were then followed up until discharge or death.

Results: There were 117 (65.4%) males out of the 179 patients with a mean age of 49.94 and 45.84 years for those with and without AKI, respectively. The prevalence of AKI was 27.9% (50/179). Out of 50 participants with AKI, 64.0% (32/50) died, contributing 41.0% of all in-patient mortality amongst participants. There was a significant association between AKI and death (p ≤ 0:001). The major precipitating factors of AKI were infections (60.0%), hypovolemia (20.0%) due to gastrointestinal bleeding and gastroenteritis, and refractory ascites (16.0%). Alkaline phosphatase, INR, model for end-stage liver disease sodium, sodium, and blood urea nitrogen were independent predictors of AKI.

Conclusion: AKI was common among patients with liver cirrhosis with high in-patient mortality. Identification of these precipitants and independent predictors of AKI may lead to prompt and targeted treatment with reduction in patient mortality.

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Endoscopic Biliary Drainage Versus Percutaneous Transhepatic Biliary Drainage for the Management of Hilar Biliary Obstruction

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Background: Hilar biliary strictures can be due to benign or malignant causes which are often difficult to differentiate. Various modalities as surgery, endoscopy and radiology have been used for the management of these strictures with variable results.
Objective: To compare outcomes of biliary drainage by either percutaneous transhepatic biliary drainage (PTBD) or endoscopic biliary drainage (EBD) in patients with malignant hilar biliary obstruction (Bismuth I and II).

Methods: This prospective case-control study was conducted on 60 patients with malignant hilar biliary obstruction recruited from the endoscopy and intervention radiology units of the National Liver Institute, menofia University, Egypt (period starting from September 2018 to October 2021). Patients were subdivided into 2 equal subgroups: group I (underwent PTBD) and group II (underwent ERCP) for biliary drainage.

Results: Forty-one patients (68.33%) underwent successful biliary drainage (24/30 (58.5%) and 17/30 (41.5%)) of groups I and II respectively. The baseline bilirubin was (21.82± 10.02) and (13.9 ± 9.07mg/d) which significantly decreased after 12 weeks of procedure to (3.2± 3.7) and (6.9 ± 5.1) in groups I and II respectively. There was no statically significant difference between the two groups (p-value 0.05). The one-year survival showed that 49 (81.7%) of cases died and 11 (18.3%) were censored. There were 29/30 (96.7 %) were died versus 20/30 (66.7 %) in groups I and II respectively. The mean survival time in the PTD group was 4.3 (95% CI: 3.1 -5.6) months versus 5.95(95%CI: 4.3-7.6) months in the ERCP group with a log-rank p-value of 0.07

Conclusion: both interventions (ERCP and PTBD) were equally effective in drainage of malignant hilar obstruction. PTD was better in drainage but ERCP was better in survival and quality of life.

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Mortality Burden Due to Liver Cirrhosis and Hepatocellular Carcinoma in Ghana; Prevalence of Risk Factors and Predictors of Poor In-Hospital Survival.

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Background: End-stage liver disease, including liver cirrhosis and hepatocellular carcinoma (HCC), is a significant cause of mortality globally. Specific causes

and predictors of liver-related mortality in low resource settings require assessment to help inform clinical decision making, direct policy and develop preventive strategies for improved survival. The aim of this study was to determine the proportion of liver-related deaths in Ghana attributable to liver cirrhosis, hepatocellular carcinoma, and chronic liver disease, and to determine the risk factors associated with these deaths. Further, we aimed to determine the rate and predictors of in-hospital mortality in a tertiary referral setting in Ghana.

Methods: We performed a retrospective cross-sectional review of mortality register entries in 11 referral hospitals in Ghana for deaths occurring between January 2018 –December 2021 and compared these with the total number of deaths reported in the District Health Information Management System (DHIMS2) of Ghana. Furthermore, in-patient liver cirrhosis and HCC cases admitted to a tertiary referral hospital were reviewed in a retrospective cohort design. Proportions of risk factors associated with liver-related deaths were calculated and predictors of in-hospital mortality were determined using multivariable-adjusted logistic regression. Survival analyses were performed using the Kaplan-Meier method.

Results: In total, 8.8% of deaths in adults aged ≥18 years were associated with liver-related causes. Specifically, 4.8%, 2.1% and 1.9% of deaths were due to chronic liver disease, liver cirrhosis and HCC, respectively. Out of 1214 liver-related deaths reported, the proportion associated with HBV infection was 48.8% (95% CI: 45.95–51.76), HCV infection was 10.0% (95% CI: 8.30–11.67), HBV-HCV co-infection 0.5% (95% CI: 0.1–0.9) and alcohol was 7.0% (95% CI: 5.58–8.45). Patients with HCC had a higher odds of HBV infection than those with cirrhosis (OR = 4.49 95% CI 1.13–17.89). Of 172 patients admitted for HCC or liver cirrhosis, the in-patient mortality rate was 54.1%. Predictors of in-patient mortality in cirrhotic patients were elevated WBC (OR = 1.14 95% CI: 1.00–1.30) and the revised model for end-stage liver disease (MELD-Na) score (OR = 1.24 95% CI: 1.01–1.54). For HCC patients, female sex (OR=3.74 95% CI: 1.09–12.81) and hepatic encephalopathy (grade 1) were associated with higher mortality (OR = 5.66 95% CI: 1.10–29.2).

Conclusion: Liver cirrhosis and hepatocellular carcinoma are a leading cause of mortality in Ghanaian adults with poor in-hospital survival. HBV infection remains the most predominant risk factor related with liver-related mortality. There is a need for sustainable and focused strategies to overcome the disease burden, such as increasing HBV vaccination (including birth dose vaccination), scaling up of screening and treatment for HBV infection, improving accessibility to curative HCV therapies, and developing functional screening and surveillance programs for early diagnosis of cirrhosis and HCC.

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Functional Characterization of Subgenotype A1 HBeAg Precursor, With and Without G1862T Using Confocal Microscopy and Mass Spectrometry.

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HBeAg is a non-structural, secreted protein of HBV. Its precursor P25 has a signal peptide, directing P25 from the cytosol to the endoplasmic reticulum (ER). Here, it is post-translationally modified by signal peptide cleavage. The G1862T (valine to phenylalanine) mutation in the precore, unique to subgenotype A1, is frequently found in HBV from HCC patients. The aromatic ring of phenylalanine interferes with signal peptide cleavage resulting in decreased HBeAg expression. To functionally characterize P25 and P25(G1862T) expression, using confocal microscopy and mass spectrometry without the interference of other viral proteins, Huh-7 cells were transfected with subgenomic constructs. Colocalization experiments with the Golgi apparatus and the ER–Golgi intermediate compartment (ERGIC) were performed.

There was no significant difference between localization of wild-type and mutant in ERGIC, with Pearson's r of 0.6234 and 0.5472, respectively. However, P25 and P25(G1862T) localized with the Golgi with a Pearson's r of 0.5723 and 0.3004, respectively (p=0.001), confirming previous studies with replication-competent plasmids. Mass spectrometry comparing the proteasome of Huh-7

cells transfected P25 or P25(G1862T), showed that proteins involved in the secretory pathway and Golgi apparatus (conserved oligomeric Golgi complex subunit 4 (p=0.003); Golgin subfamily A member 7 (p=0.002); asialoglycoprotein receptor 2 (p=0.0001)) had a 1.5 to 2.5 fold decrease in P25(G1862T) versus P25 expressing cells. These proteins are involved in peptidyl-amino acid modification, protein palmitoylation, Golgi to plasma membrane targeting and transportation, and fusion of vesicles to the cytoplasmic membrane.

In conclusion these experiments confirm that post-translational modification of P25 is needed for its movement from the ERGIC to the Golgi. Interference with signal peptide cleavage prevents expression of HBeAg, contributing to the high frequency of HBeAg-negativity seen in HCC patients infected with G1862T. future work will involve investigating other downstream pathways using mass spectrometry to determine if any are involved in hepatocarcinogenesis.

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Clinical Characteristics and Outcomes of Patients With Cirrhosis and Hepatocellular Carcinoma in the Gambia, West Africa

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Background: Due to lack of curative treatment for cirrhosis and hepatocellular carcinoma (HCC), clinical relevance to screen for cirrhosis and HCC remains unclear in Africa. We investigated the clinical characteristics and outcomes of patients with cirrhosis and HCC in The Gambia and assessed the impact of Tenofovir Disoproxil Fumarate (TDF) on survival.

Methods: Prospective cohort study of consecutive adults diagnosed with cirrhosis or HCC between 2012-2015 in The Gambia. HBV-related cirrhotic patients were offered TDF. Primary outcome was overall survival estimated using the Kaplan-Meier method. The inverse probability of treatment weighted (IPTW) multivariable Cox proportional hazards models were performed to determine the effect of TDF.

Results: A total of 84 cirrhotic and 252 HCC patients were included. Patients were predominantly male (76%) with median age 42 years (IQR: 33-55). Positive HBV, HCV and HDV serologies were detected in 66%, 10% and 10%, respectively. Sixty-four percent of HCC patients presented late with multifocal HCC and median tumoral size of 7.5cm (IQR: 5.4-10.8). Median survival was 17.1, 11.3 and 1.5 months among patients with compensated cirrhosis, decompensated cirrhosis, and HCC, respectively (log rank p<0.0001). TDF treatment was significantly associated with an improved survival among HBV-related cirrhotics (adjusted HR 0.13; 95% CI 0.04-0.40, p<0.001) but median turnaround between diagnosis and TDF background was 4.9 months. The estimated effect of TDF remained similar in the IPTW-adjusted Cox analysis (HR: 0.14; 95% Cl: 0.06-0.34, p<0.001). Ascites (HR: 1.83, 95% CI: 1.09–3.09) and portal thrombosis (HR: 3.81, 95% CI: 1.99–7.30) were independent risk factors of mortality in HCC cases.

Conclusion: Cirrhosis and HCC screening and treatment programs alongside simplified treatment guidelines are urgently required in Africa.

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Prevalence of Advanced Liver Disease Among Newly Diagnosed Chronic Hepatitis B Virus Infected Patients in Lagos, Nigeria

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Background: Chronic HBV infection is prevalent in Nigeria, and is the major cause of liver disease,

including cirrhosis and hepatocellular cancer. The aim of this study was to determine the prevalence of advanced liver disease among recently diagnosed chronic HBV patients presenting to our hospital.

Methods: This retrospective study, which was carried out between August 2019 and December 2020, included all subjects in whom CHBV was diagnosed for the first time within 6 months of presenting to LUTH. None of them had received HBV therapy prior to presentation. Advanced liver disease was defined as either APRI> 1.5, FIB4 >3.25, any symptom of hepatic decompensation, or radiological or histological diagnosis of cirrhosis or HCC. Sociodemographic, clinical and laboratory data were extracted from the medical records of eligible subjects. Ethics approval was obtained prior to commencement of the study. Statistical analysis was performed using R version 4.1.2 software.

Results: A total of 212 subjects were studied, comprising 139 males (65.57%) and 73 females (34.43%), the mean age was 41.14 ± 11.6 years. Thirty-two (15.09%) had a first degree relative with CHBV, of which 12 (37.5%) developed CLD (cirrhosis or HCC). Seventy-nine (37.3%) used herbal concoctions, 43 (20.3%) took alcohol in any quantity, three (1.4%) were HIV-coinfected, while there was no HCV coinfection. Comorbidities present included hypertension (39, 18.4%), diabetes (3, 1.4%) and chronic kidney disease (1, 0.5%). Advanced liver disease was present in 76 (35.85%), comprising 56 (73.68%) males and 20 (26.32%) females (M:F ratio of 2.8:1), mostly occurring between the ages of 31-50 years (55.3%). Advanced liver disease was associated with lower mean PCV and albumin levels, but not with gender, family history of HBV or CLD, use of alcohol or herbal concoction.

Conclusion: Advanced liver disease is common in our patients whose CHBV is recently detected, and is particularly prevalent in the fourth and fifth decades. Strategies for the early diagnosis of CHBV infection, as well as early linkage to care are advocated.

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Bacterial Infections in Patients with Liver Cirrhosis: Prevalence, Predictors, and in-Hospital Mortality at a District Hospital in Ghana

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Background: In patients with liver cirrhosis, bacterial infections are common with high in-hospital mortality. In Ghana, bacterial infections in liver cirrhosis patients and their impact on in-patient mortality are generally unknown. This study was conducted to define the prevalence, predictors, and treatment outcomes of cirrhotic patients with bacterial infections admitted to a district hospital in Ghana.

Methods: Patients with liver cirrhosis hospitalized from 1st January, 2018 to 24th April, 2020 were consecutively recruited. The demographic data and clinical presentations of the patients were collected using standardized questionnaire. Full blood count, liver function test, renal function test, ascitic fluid analysis and culture, urinalysis and culture, hepatitis B surface antigen, anti-hepatitis C antibodies and abdominal ultrasound scans of the abdomen were conducted for all patients.

Results: There were 110 (65.09%) males out of the 169 patients with a mean age of 47.10±12.88 years. The prevalence of infections was 42.01% (71/169). Out of 71 participants with infections, 59.15% (42/72) died. Patients with infections had a longer hospital stay (11.88 ± 7.19) than those without infection (9.41±5.59), (p - 0.016). Infections identified in decreasing order of frequency were pneumonia 38.03% (27/71), followed by UTI in 23.94% (17/71), SBP in 14.08% (10/71), sepsis in 11.27% (8/71), cellulitis in 7.04% (5/71) and infective gastroenteritis in 5. 63% (4/71). Fever, encephalopathy, high white cell count, and Blood urea nitrogen were independent predictors of bacterial infections

Conclusion: Bacterial infection among the participants admitted to district hospital with liver cirrhosis was common with high in-hospital mortality.

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MAGNITUDE AND CAUSES OF CHRONIC LIVER DISEASEAMONG PATIENTS ON FOLLOW-UP AT GASTROENTEROLOGY AND HEPATOLOGY CLINIC AT ST PAUL HOSPITAL MILLENNIUM MEDICAL COLLEGE

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Background: Chronic liver disease (CLD) is a progressive destruction of liver tissue with subsequent necrosis that persists for at least 6 months. Chronic liver disease causes increased disability, morbidity and mortality. The appropriate diagnosis and management of the underlying causes of CLD will improve the outcome of the patient.
Methods: Across-sectional analytical study was conducted from April 1 ,2021– June 30, 2021) among patients on follow up at Gastroenterology Clinic of St Paul's Hospital Millennium Medical College. A structured checklist prepared using different languages, with components of demographic, socio-cultural and behavioral data and clinical characteristics, was used to collect data. The screened data was entered into a computer using Statistical Package for Social Sciences (SPSS) version 25.0 for windows. Tables and figures were used to describe the results. A p- value < 0.05 with 95% confidence interval (CI) for odds ratio was used in judging the significance of the associations during multinomial logistic regression.

Results: A total of 201chronic liver disease patients, accounting for 16.1% of the total patients on follow up at Gastroenterology clinic during the study period, were analyzed, of which majority were males, 134(66.7%). The mean age was 41.5years and ranges between 18 to 79 years. HBsAg and anti-HCV antibody was reactive in 47.3% and18.4%, respectively. HBV was found to be the most common cause of chronic liver disease which accounted for 44.8% followed by ALD (18.4%) and HCV (13%) infection. In 12.4% of cases, the cause was not identified. The study showed that female sex (AOR=0.12; CI 95%, 0.71-0.525, p=0.037) and dental extraction (AOR=3.99; CI 95%, 1.08-14.81, p=0.004) had significant association with etiology of chronic liver disease.

Conclusion: The study showed that the most common cause of CLD was HBV followed by Alcohol-related liver disease and HCV infection. Moreover, female sex and dental extraction at health facility had significant association with HCV than other causes of chronic liver disease.

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Epidemiological Characteristics of HBV and HCV Infection Among Rural Population in Northeast, Nigeria

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Background: Viral hepatitis constitutes a major public health problem worldwide with an attendant burden in developing countries of sub-Saharan Africa and Asia which have limited diagnostic facilities and management approach. Globally, the incidence and associated hepatitis-related mortality continue to increase. In Nigeria, available HBV and HCV prevalence varies with geographical locations, demographic variables, and exposure to risk factors. There is a paucity of epidemiological data on HBV and HCV among the rural population where most of the population resides. It thus creates a gap in understanding the burden and transmission of infection in communities exposed to the risk factors. These will affect public health control and case management. Data from rural populations would provide an insight on prevalence, early detection, and limit transmission into the urban setting through immigration. Hence, these descriptive cross-sectional

studies of epidemiological characteristics of HBV and HCV infection among rural populations aimed at providing necessary data for public health information for policy design.

Methods: The descriptive cross-sectional study was conducted in three rural locations Faggo, Shira, Disina, and Dass of Bauchi state, Northeast Nigeria. The study was conducted with the assistance of community members and their leaders. Detailed study questionnaires and consent forms were administered with oral interviews. Information on the questionnaire includes socio-demographic variables and risk factors. Serodetection of HBsAg and Anti-HCV was carried out using a Lab-Acon kit, the procedure according to manufacturer instruction. Descriptive analysis of data using SPSS version 20.0
Results: A total of 1213 study participants, comprised of 785(65%) males and 428(35%) females majority within the age group of 18-45years(41%), 740(61%) had primary education and 417(34%) are self-employed. 108(8.9%) were positive for HbsAg and 12(0.99) for Anti-HCV. High seropositivity rate was recorded with study participant within age-group, 18-45years(HBV 5.11% vs HCV 0.49%), with gender distribution, male(6.4% vs 0.82%) female(2.47% vs 0.16%) and primary education(5.11%vs 0.41%). A significant difference was observed between HBV and HCV with the risk factors, incision marks, sharing of toothbrushes, and unprotected sex(0.001)

Conclusion: The HBV and HCV prevalence of 8.9% and 0.99%, though relatively low compared to other studies, is a public health concern. Enhanced public awareness and measures to control identified risk factors will go a long way in control measures.

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Impact of HIV Coinfection and HIV-Associated Immunosuppression on HBV Markers and Associated Liver Disease in People With Hbv Infection in Zambia

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Background:
Human immunodeficiency virus (HIV) coinfection accelerates the natural history of chronic hepatitis B virus (HBV) infection including the development of hepatocellular carcinoma. However, previous comparisons between people with HBV monoinfection and HBV/HIV coinfection often had limited sample sizes, included a narrow range of CD4 counts, did not adjust for alcohol use, and rarely occurred in sub-Saharan Africa (SSA) where HBV/HIV coinfection is most prevalent. As novel HBV therapies are developed, it will be important to understand how they may work in people with HIV. Leveraging HBV cohorts in Zambia, we analyzed the impact of HIV coinfection on HBV viral markers and liver fibrosis.

Methods: Adults (18+ years) in Lusaka who were hepatitis B surface antigen (HBsAg) positive were prospectively enrolled in either an HBV/HIV coinfection cohort if HIV-positive and treatment-naïve and or an HBV monoinfection cohort if HIV-negative. All were anti-hepatitis C negative. At enrollment we performed transient elastography (TE), screened for alcohol use, and measured liver enzyme tests, HBV DNA, hepatitis B e antigen (HBeAg), and CD4 count in HBV/HIV coinfection. We categorized patients with coinfection by their CD4 (<100, 100-350, and >350 cells/mm3). We excluded from analysis those with HBV monoinfection that was diagnosed with a clinically-driven test (i.e., due to liver signs/symptoms) to reduce selection bias, and we excluded patients with prior therapy. In separate multivariable regression models, we compared HBV replication markers (DNA and HBeAg), ALT elevation (>35 U/L for men, >25 for women), and significant fibrosis by TE (liver stiffness >=8.5 kilopascals), between patients with HBV monoinfection and HBV/HIV coinfection overall and by CD4 category.

Results: Among 753 HBsAg-positive adults enrolled, we excluded 57 for HBV monoinfection diagnosis on clinical suspicion and 41 for prior therapy. Among the remaining 655 (263 with HBV monoinfection and 392 with HBV/HIV coinfection), 63.0% were men (67.3% in HBV/HIV, 60.2% in HBV only), and median age was 33 years (33 in HBV/HIV, 32 in HBV only). Among patients with HBV/HIV coinfection, median CD4 count was 202

cell/mm3, and 83 (14.0%) had CD4 <100. Compared to HBV monoinfection, and adjusted for age and sex, HBV/HIV coinfection overall was associated with HBV DNA >2,000 IU/ml, HBeAg-positivity, ALT elevation, and significant fibrosis. When considering CD4 count, associations with HBV DNA >2,000 IU/ml and HBeAg-positivity increased with the degree of immunosuppression; however, there was an inverse association with fibrosis (i.e., more fibrosis in HBV/HIV with higher CD4 counts; Table 1).

Conclusion: Patients with treatment-naïve HIV/HBV coinfection overall had increased markers of HBV replication and fibrosis compared with those with HBV monoinfection. While HBV replication in HIV increased with increasing degree of immunosuppression; evidence of liver inflammation/fibrosis was uncommon in patients with CD4 <100 cell/mm3, which raises the possibility of an immune tolerant-like state in these patients. These data underscore the need to consider HIV-specific factors in addition to HBV parameters when developing and evaluating novel HBV antiviral and immunotherapies for patients with HBV/HIV coinfection.

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Hepatitis B Virus Sub-genotype A1 Evolutionary Dynamics in Botswana

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Background: Botswana has an intermediate HBV prevalence of 3.1–10 %. The predominant genotypes are A, D and E with a prevalence of 80%, 18.6% and 1.4% respectively. No studies have investigated the origins and evolutionary history of the HBV genotypes in Botswana.

Objectives: We sought to investigate the Time to Most Common Recent Ancestor (tMRCA) and spread of the predominant HBV sub-genotype, A1 (HBV/A1) in the population of Botswana. We also aimed to determine the diversity of HBV/A1 open reading frames (ORFs) in Botswana HBV sequences.

Methods: A retrospective study utilizing 24 near-full length HBV sequences sequenced in Botswana from 2009, retrieved from NCBI sequence database. Additional 130 HBV near full-length sequences were included as references. Bayesian coalescent analyses were used to study the population dynamics of the 154 HBV/A1 sequences. The temporal signal was estimated through the root-to-tip method using node density in tempEST. Correlation coefficient was used to indicate the amount of variation in genetic distance explained by sampling time and used as a measure of the clockliness of the data. Skyline plots were used to estimate the effective HBV infections in Botswana population over time. Botswana sequences were partitioned into 7 HBV ORFs and used to calculate nucleotide diversity based on pairwise distances analysis implemented in MEGA.

Results: The estimated tMRCA of HBV/A1 in Botswana dated back to 1937 (95% highest posterior density (95% HPD). Skyline plot analysis showed an increase in the size of the HBV/A1 infected population around 1999-2000 which is over the last 22-23 years ago. Pre-core region had highest median diversity of 1 (IQR, 0.0115–1) and the surface region was relatively conserved with median diversity of 0.0075 (IQR, 0.0029–0.0135) p <0.01.

Conclusion: Study provides baseline subgenotype-based phylodynamic information by predicting the tMRCA of HBV/A1 sequences revealing the evolutionary dynamics of HBV/A1 thus aiding in theoretical, clinical prevention and treatment of HBV/A1 in Botswana. Study also confirmed that the surface region is the most conserved region hence an ideal target for effective HBV vaccine designs.

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The Impact of Hepatitis B Discrimination within Africa

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Background: 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. People with hepatitis B often face discrimination that denies them employment or education opportunities, results in unfair treatment at work or in school, limits their ability to emigrate to certain countries, and in some cases prohibits them from serving in the military. Discrimination specific to hepatitis B has not been widely documented within the literature, particularly within the African context. This study aims to describe the lived experience of discrimination, document its impact and shed light on the significant impact it has on those living with hepatitis B in Africa.

Methods: To document discrimination, a mixed-method approach was employed using a self-report survey and key informant qualitative interviews. The survey was widely distributed through community networks and partnerships worldwide and asks individuals to share their experiences related to discrimination. For qualitative data, key informants were identified as community health leaders, public health scientists, doctors, and researchers, many of whom were also living with hepatitis B. Using a semi-structured guide, informants were asked to describe their experiences and any challenges for people living with hepatitis B including marginalization and its' consequences. A codebook was used to guide the organization of data for analysis, and all transcripts were double coded.

Results: A total of 87 individuals from the African continent completed the survey 43% from Nigeria, 13% from Uganda, 10% from Ghana, 9% from Ethiopia, 6% from Sierra Leone, 3% from Kenya, and 2% from Egypt and Libya with the remaining 12% from other countries with smaller representation (Algeria, Burundi, Cameroon, Liberia, Malawi, Morocco, Somalia, South Sudan, Zambia, and Zimbabwe). Most respondents were between the ages of 30-39 (52%) and identified as male (68%) who personally experienced some for of discrimination (80%). Many of the reported cases of discrimination from the survey related to deportation, denial of visas, jobs, and employment because of testing positive for hepatitis B. Almost half of the respondents reported that the discrimination occurred by an employer (47%), within an educational setting (18%), or health care setting (15%). Key informants echoed the findings from the survey and reported the substantial quality of life implications and often poorer health outcomes resulting from hepatitis B discrimination. Informants identified the significant impact of hepatitis B discrimination occurring within a range of education-based services across several countries as well as military exclusion or removal if individuals are found to have hepatitis B.

Conclusion: Our data demonstrate that hepatitis B discrimination has a significant impact on the quality of life for those within Africa. Discrimination can occur at various points in life from education, to seeking employment, to restrictions on entry, travel, and stay in other countries. This study demonstrates the impact of discrimination and the need for future research that can lead to policy change and protections for people living with hepatitis B.

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Strategy to Scale up Hepatitis Elimination Activities Through Health Workforce Education Program in Zambia

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Background: Chronic viral hepatitis is neglected in sub-Saharan Africa. While evidence-based tools exist to screen for, treat, and prevent hepatitis B and C virus infections, implementation has been slow largely because of the knowledge gaps. Lack of local expertise in viral hepatitis management is a major problem. Health workers often lack competency to manage hepatitis and awareness of the condition among the general population is very limited. The expense and time required to establish local expertise and train the health workforce will delay progress towards hepatitis elimination. In Zambia, we established an integrated, cost-effective, decentralized program to train health

workers in HBV evaluation and management. We now present our preliminary experience and results.

Methods: We targeted 3 groups of health workers with hepatitis education. First, we recruited a group of 'hepatitis expert trainees', who are medical officers based in Lusaka who were undertaking specialty clinical training to be cross-trained on a part-time basis in viral hepatitis. Expert trainees joined weekly didactic lectures on hepatitis B natural history and management, presented clinical cases, and attended an HBV clinic supervised by an expert. They were also trained as facilitators in Extension for Community Health Care Outcomes (ECHO), a distance clinical training tool that utilizes virtual meeting platforms in a hub and spoke model, and attended a sub-Saharan Africa wide ECHO. After six months expert trainees were allowed to deliver lectures, manage HBV patients with minimal supervision, and lead Project ECHO sessions for a national audience. The second group were HIV/TB focused clinical mentors, based in 4 provinces, whose main role was to provide clinical mentorship to staff across various facilities under provincial health offices. During their quarterly meetings in Lusaka, a day-long session on hepatitis was added. In addition, HIV/TB mentors joined bi-weekly virtual meetings/trainings. The third group targeted were front-line health workers (including medical and clinical officers, nurses, pharmacists) at the 310 facilities in Zambia that participated in the MoH's national ECHO program. Every 2-3 months, they were invited to a hepatitis ECHO session.

Results: From September 2021 to May 2022, 37 expert trainees initiated the program, and 32 remain active. Among active trainees, an average of 12 lectures and 8 clinic sessions were attended, and an average of 29 hepatitis patient visits/trainee occurred. In addition, 28 were certified as Project ECHO facilitators and 3 have served as facilitator or expert discussant during a national ECHO session to date. We also engaged 80 HIV/TB mentors from Eastern, Lusaka, Southern, and Western Provinces, and of them 31 attended at least 3 training activities. Finally, we reached 511 unique health workers (a larger number logged in but did not register) across all 10 Zambian provinces through delivery of 4 hepatitis ECHO sessions. ECHO sessions were attended by an average of 312 health workers.

Conclusion: Leveraging existing healthcare workforce programs such as the ECHO model and HIV/TB mentorship program to scale-up hepatitis B education and training was feasible, had national reach, and promises to catalyze strides toward hepatitis B elimination in Zambia.

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Occult Hepatitis B Virus Infection Among People With HIV in Rural and Peri-Urban Communities in Botswana

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Background: Occult hepatitis B virus (HBV) infections (OBI), characterised by the detection of replication competent HBV deoxyribonucleic acid (DNA) in the serum or liver of HBV surface antigen (HBsAg) negative individuals often go unreported in national HBV reports. This overlooks another source of morbidity and mortality in the population as these infections have clinical relevance such vertical transmission, HBV reactivations particularly in immunocompromised individuals, drug resistance and hepatocellular carcinoma. We aimed to determine the burden of OBI among people with HIV (PWH) from rural and peri-urban communities in Botswana.

Methods: Archived HBsAg negative plasma samples of PWH from 30 geographically dispersed villages in Botswana from a previous study, Botswana Combination Prevention Project (BCPP) were used. The samples were collected between 2013-2018 and were from participants aged 16-64 years of age. HBV DNA was quantified using the COBAS® AmpliPrep COBAS® Taqman®, HBV Test v.2.0 (Roche diagnostics, Mannheim, Germany) following the manufacturer's instructions with a lower limit of detection of 20 IU/mL and higher limit of detection of 170000000IU/mL. Participant samples were also screened for HBV core antibodies (anti-HBc) by serology. Participants demographics and HBV serological markers were retrieved from the parent study databases. Chi-squared and Wilcoxon rank-sum tests were used to compare categorical and continuous variables,

respectively, between OBI infected and uninfected participants. P-values less than 0.05 were considered statistically significant.

Results: A total of 381 HBsAg negative participant samples were screened for HBV DNA, and 126 [33.1% (95% CI: 28.5–37.9)] had detectable were OBI positive. DNA. Of those with detectable HBV DNA, 85/126 (67.5%) had HBV DNA levels <20IU/mL while the rest had HBV DNA levels ≥20IU/mL. One participant had a viral load of 7,874,196IU/mL. The participant was an antiretroviral therapy (ART)-naïve female aged 53 years with an HIV viral load of 1,505,646cps/mL. A total of 118 participants with OBI had anti-HBc results and 67/118 (56.8%) were positive for the anti-HBc while the remaining 43.2% were negative for anti-HBc. There was no statistically significant difference between OBI infected and OBI-uninfected participants in gender, age, nadir CD4+ T-cell count, log HIV viral load, ART status, ART type and duration on ART.

Conclusion: We note a high OBI prevalence of 33.1% among PWH in understudied regions in Botswana, a first report in most of these communities. OBI remains a source of transmission in the populations as high HBV DNA level OBI cases are present. OBI screening in PWH in Botswana is warranted to guide treatment choices and drug switches. Further OBI studies are warranted to contribute to the elimination of viral hepatitis.

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Hepatitis B Surface Antigen Amongst South Africans Attending Public Health Facilities Over a Five-Year Period: 2015 to 2019

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Hepatitis B remains a potentially life-threatening viral infection of the liver and a global public health concern despite the availability of effective vaccines for over 30 years. The World Health Organisation (WHO) estimated that 296 million people were living with chronic hepatitis B virus (HBV) infection. The HBV surface antigen (HBsAg) prevalence in South Africa is estimated at 7%. While most South African HBsAg studies targeted distinct sentinel cohorts, we aimed to determine HBsAg positivity in the public health sector of all nine provinces of South Africa.

We conducted a retrospective, quantitative, cross-sectional study on HBsAg positivity from tests performed nationally during the period 2015 to 2019. The date was obtained from the National Health Laboratory Service Central Data Warehouse. For each consecutive year, data was cleaned, de-duplicated and appended prior to interrogation to determine the distribution of HBsAg positive cases by age group, gender and province. Statistical differences between gender by age group was done using the Pearson's chi-squared test (Stata/IC, Version 14.1, Texas, USA). We identified 176,530 cases who tested positive for HBsAg at least once during the 5-year period, with a test positivity rate of 9%. Individuals aged 25 to 44 years old had the highest proportion of HBsAg positive tests (115,906, 65.7%). Amongst individuals 0 to 14 years old who tested positive for HBsAg (2,202), the highest proportion of tests were in age group 0 to 4 year old (1,131, 51.4%). Gauteng had the highest proportion of cases (65,085/176,530, 36.9%) and also the highest number of HBsAg positive cases per 100,000 population (450/100,000). HBsAg positivity in males were significantly higher than females in eight of the nine provinces ($p \leq 0.0306$), except in Limpopo with a significantly higher proportion in females ($p = 0.0103$).

From the five year data on our passive surveillance, the national HBsAg test positivity rate was 9.0%. We have shown that HBsAg positivity is still prevalent even amongst vaccine-eligible individuals and is likely due to suboptimal vaccine coverage rates reported for South Africa. Although, HBsAg positivity amongst children 0 to 4 years old may be associated with transient positivity soon after vaccination, reasons for testing in this age group (that should be seemingly asymptomatic) still remain unclear. There remains the possibility that the majority of HBsAg positive cases under 5 years old were vertically infected. Numbers reflected in the study represent minimum estimates, as many may not present at a health care facility for testing and remain undiagnosed. In addition, data on the province was based on the location of the testing facility and does not reflect on patient place of residence or birth. Also, our data was not linked to HIV status and we cannot report on co-infections.

The strength of the study is the use of a robust nationally representative public health dataset comprising over 2,3 million records to aid in planning strategies for hepatitis B elimination, to improve our HBV vaccine coverage, and include a birth dose to interrupt vertical transmission of HBV.

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Tenofovir Alafenamide vs. Tenofovir Disoproxil Fumarate or Entecavir for Hepatitis B in South Africa: A Cost-Effective and Budget-Impact Analysis

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Background: Long-term hepatitis B (HBV) suppression is a primary goal of HBV management to attenuate, cirrhosis (compensated, CC or decompensated cirrhosis, DC) and hepatocellular carcinoma (HCC) risk. Nucleot(s)ide antiviral options include tenofovir alafenamide (TAF), tenofovir disoproxil fumarate (TDF) and entecavir (ETV). TAF is a novel treatment option that provides improved kidney function and bone mineral density benefits compared to TDF. Given TAF's higher price compared to TDF, the cost-effectiveness (CE) and budget impact (BI) of TAF was investigated in South Africa, a high HBV burden country.

Methods: A CE model was developed using a Discretely Integrated Condition-Event Simulation framework to compare the cost-effectiveness and clinical outcomes of TAF vs. TDF or ETV. Clinical outcomes included chronic kidney disease (CKD - stage 3), dialysis, renal transplantation (RT), CC, DC, HCC, major osteoporotic fractures (MOF), and liver transplantation. Input costs were sourced from the standard medicines price registry, published literature, a reference pathology laboratory, expert opinion, and a private hospital. Health-related quality of life reference estimates were sourced and applied to the disease-related states and events. Utility values for HBsAg seroconverted patients are assumed to have the same quality of life as the general United States population. A BI model generated the overall pharmacy and other clinical expense impact of TAF. All costs were reported in 2022 South African Rands (ZAR). A discounting rate of 5% was applied in the CE analysis but excluded in the BI analysis, consistent with the International Society for Pharmacoeconomics and Outcomes Research guidance. Deterministic and probabilistic sensitivity analyses were conducted to identify high-impact inputs and possible changes in treatment decision given input variations.

Results: TAF resulted in an overall reduction in viral resistances, CC, HCC, CKD III, MOF, end-stage kidney disease (dialysis and RT) and more HBeAg seroconversion events when compared to TDF and ETV. The incremental cost-effectiveness ratio of TAF vs. TDF or ETV both resulted in TAF as the dominant option, costing less with more improved quality-adjusted life-years. In a chronic HBV cohort of 1,675 patients, the incremental cost per health insurance member per month (PMPM) to finance TAF is ZAR 0.24 (2022) and increases to ZAR 0.81 (2026) as TAF utilization increases. TAF cost (ZAR 49.6 million) accounts for 14% of the total spend (ZAR 364.8 million) which includes disease management, CKD III, haemodialysis, RT, CC, DC, bone density complications and HCC.

Conclusion: We predict that TAF provides enhanced health and cost outcomes for patients with HBV in South Africa. The benefits accrued are greater among patients at a higher baseline risk for bone and renal complications. TAF is a cost-effective option in South Africa and warrants consideration as viral elimination programs develop.

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Understanding Sex, Comorbidity, and Chronic Hepatitis B: A Real-World, Cross-Sectional Study From Cape Town, South Africa

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Background: Globally, an estimated 300 million people are living with chronic hepatitis B (CHB), with 1 million deaths each year due to hepatitis B virus (HBV)-related cirrhosis and hepatocellular carcinoma (HCC). Males living with HBV often fare worse; compared to females they have increased exposure among certain risk groups, increased risk of HBV flares, cirrhosis and progression to HCC. Comorbidities may play a role in modulating progression to liver disease in CHB, for example diabetes is a risk factor for developing HBV-associated HCC. There are few studies addressing these questions in Africa, where their significance is critical due to high HBV prevalence. We investigate the impact of sex, comorbidity and treatment on liver disease in a cohort of adults with CHB in South Africa.

Methods: Adults (>18 years) with CHB were recruited from routine outpatient appointments at Tygerberg Hospital, Cape Town, South Africa. Basic demographic data, laboratory tests, elastography, treatment status and comorbidities were collected. Mann-Whitney tests were used for continuous and Fisher's exact test for categorical variables using GraphPad Prism. Ethics approval was granted by University of Oxford Tropical Research Ethics Committee (ref. OXTREC 01-18) and Stellenbosch University Human Research Ethics Committee (HREC ref. N17/01/013).

Results: Between July 2018 and February 2020, 271 adults with CHB were recruited. Median age was 41 years (IQR 34, 50) and 43% (117/271) were female. Most participants were Black African (63%, 171/271) or mixed-race (31%, 84/271). 59% (159/271) were on HBV treatment, of which 74% (117/159) were on anti-retroviral therapy. A significantly higher proportion of males than females had platelets <75 x103 /µL (14% vs 0%, p<0.01), serum bilirubin >17 mmol/L (22% vs 5%, p<0.01), cirrhosis (16% vs 6%, p=0.04) and a history of ascites (9% vs 1%, p=0.03). More males had an APRI score >2 (indicating cirrhosis), but this difference was not significant (14% vs 4%, p=0.07). There was no significant difference in the proportion of F2/3/4 (>7kPa) fibrosis scores derived from fibroscan measurements (34% vs 29%, p=0.62) or median HBV viral load (210 vs 373 copies/mL, p= 0.92) between sexes. There was no significant difference in sex distribution of those treated for HBV mono-infection or HBV/HIV co-infection. Hypertension was the most common comorbidity (23%, 62/271), followed by chronic kidney disease (6%, 17/271) and diabetes (4%, 12/271). HIV was the most common co-infection (140/271, 52%), followed by TB (7%, 18/271) and hepatitis C (0% 1/271). There were no significant differences in prevalence of comorbidities between sexes.

Conclusion: In this South African CHB cohort, males have evidence of more severe liver disease than females based on several parameters (though not fibrosis scores). There was no evidence of difference in proportion on anti-HBV treatment, nor differences in prevalence of comorbidities between sexes, based on univariate analysis. Due to high prevalence of HIV in this setting, disaggregating the confounding effects of HIV co-infection and therapy is difficult. Multivariate analysis of larger cohorts is required to further investigate this observation, and deepen our understanding of the complex interplay between sex, co-morbidity and HBV.

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Screening for Hepatitis B in Partners and Children of Women Positive for Surface Antigen, Burkina Faso

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Background: The prevalence of chronic hepatitis B virus infection remains high in adults and African children born before implementation of HBV vaccination. Rationale: Antenatal consultation may provide an unique opportunity for testing children and partners of HBV-infected pregnant women.
Objectives: We evaluated the feasibility of HBV screening in partners and children, and identifed factors associated with a successful screening uptake and carriage of HBV surface antigen (HBsAg).
Design: Pregnant women identified to carry HBsAg at antenatal screening received a post-test counselling at the Yalgado Ouédraogo University Hospital Center,

Ouagadougou, Burkina Faso. Women were advised to disclose their status to partners and to encourage their partners and children to be screened for HBsAg.

Methods: Factors associated with the screening uptake and HBsAg-positivity in children and partners were explored using a multivariable logistic regression.

Results: One thousand HBsAg-positive pregnant women participated in this study. Of 2,281 partners and children eligible for the family screening, 436/1000 (43.6%) partners and 215 /1281 (16.8%) children were successfully screened. HBsAg was detected in 55 (12.6%) partners and 24 (11.2%) children. Eighty-nine percent of women (n = 886) disclosed their HBV status to their partners. After adjusting confounders, the partners' screening uptake was higher in married couples (adjusted odds ratio (OR): 4.76 [95%CI: 1.88-11.11]), in those who attended the women's first post-test consultation (1.61 [1.18-2.20]), and in partners to whom the women disclosed their HBV status (2.86 [1.68-4.88]). In children, HBsAg carriage was higher in those born before the background of HBV vaccination in Burkina Faso (adjusted OR: 4.4 [95%CI: 1.47-13.15]), among those whose mothers tested positive for HBV e antigen (HBeAg) (11.47 [4.41-29.81]) and had HBV DNA levels ≥200,000 IU/mL (14.04 [4.89-40.28]).

Conclusion: Focused testing of HBV in partners and children of HBsAg-positive pregnant women provided an opportunity to identify additional HBV-infected cases. Engagement of the partners in women's disclosure process might increase the screening uptake. Children born before the background of infant hepatitis B vaccination and those born to women tested positive for HBeAg and high viral load were at a greater risk of HBV infection, and require particular attention for their testing and linkage to care.

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Epidemiology of Occult Hepatitis B and C in Africa: A Systematic Review and Meta-Analysis

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Background: Occult hepatitis B (OBI) and C (OCI) infections lead to hepatic crises including liver cirrhosis and even hepatocellular carcinoma (HCC). The distribution of OBI and OCI is variable and depends on several factors such as, the type of tests used, the study-population and the level of endemicity of these infections in the studied area. This study aimed to assess the overall prevalence of OBI and OCI across Africa.

Methods: For this systematic review and meta-analysis, we included studies reporting prevalences of OBI or OCI among patients living in Africa. We searched online database such as PubMed, Web of Science, Afican Journal Online and African Index Medicus for studies published until May 2021. Study selection and data extraction were performed by at least two independent investigators. Heterogeneity was assessed using the χ^2 test on the Cochran Q statistic and H parameters. Sources of heterogeneity (I^2) were explored by subgroup analyses. A funnel plot and Egger's test were performed to assess publication bias.

Results: Overall, we included 77 studies, pertaining to 92 prevalences. Specifically, we found 75 prevalences of OBI; 16 of OCI and one (1) study reported the fatality rate on OBI. The overall estimate for the prevalence of OBI was 14.83% [95% CI: 11.71-18.24]. The prevalence distribution of seronegative OBI and seropositive OBI was 8.08% [95% CI: 4.21-12.91] and 26.28% [95% CI: 17.51-36.05] respectively (p=0.001). The overall estimate for the prevalence of OCI was 11.59% [95% CI: 7.89-16.96]. The pooled prevalence of seronegative OCI was estimated at 13.08% [95% CI: 5.98-22.15] and that of seropositive OCI at 11.35% [95% CI = 4.04-21, 52] (p=0.7). In Sub-group analysis, patients with tumors had the highest rates of OCI and OBI, respectively 25.33% [95% CI: 2.18-60.11] and 40.4% [95% CI: 18.7-64.2]. Furthermore, sub-group analysis also showed substantial heterogeneity between included studies.

Conclusion: The prevalence of OCI and OBI in Africa was 11.59% and 14.83% respectively. However, very few studies in Africa in focus on OCI. There are many gaps in several sub-Saharan Africa regions regarding that aspect.

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Prevalence of Hepatitis Among the General Population in Botswana From the STI Microbial Survey of 2017/2018

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Background: Hepatitis B virus (HBV) infection, the most common form of chronic hepatitis worldwide, affects an estimated 360 million people globally. In 2015, WHO estimated that 257 million people were living with chronic HBV, and among the 36.7 million people living with HIV, an estimated 2.7 million also had chronic HBV. Co-infection of HBV and HIV is common; however, there are limited data on HBV prevalence among the general population or any select populations living with HIV in sub-Saharan Africa.

Methods: A cross-sectional study design was used to establish the prevalence of HIV and other sexually transmitted infections, including HBV, in the general population in 12 districts in Botswana. A sample of females and males aged 16 years and above were recruited from health facilities across the country and enrolled by means of purposive sampling. Some of the factors that influenced the sampling approach were cross border districts, busy mining towns with a lot of migrant workers, high transit districts geographical considerations, part STI surveillance data and availability of resources. An interviewer-administered structured questionnaire was used to collect self-reported data, and whenever possible, samples were collected for laboratory analysis. Continuous and categorical data were summarized by medians (IQR) and frequencies (percentages), respectively. Factors associated with the occurrence of Hepatitis B were investigated using multivariable logistic regression modelling and reporting the adjusted Odds ratio (AOR) with 95% CI and statistical significance of $p<0.05$.

Results: The overall prevalence of HBV was 3.7% (3.02-4.53) for the general population. The highest prevalence was detected in Maun at 8.19%. This was followed by Tutume and Ghanzi at 6.52 and 5.47%. Similarly, Francistown 3.42%(1.72-6.70), Kgalagadi North 5.00%(2.51-9.70) and South 4.03%(1.81-8.70) were also above the national average of 3.7%. No cases of hepatitis C were reported in any of the districts.

Conclusion: The overall prevalence of HBV was 3.7% in the general population. The prevalence of HBV was highest in tourist areas of Ngami, followed by two adjacent districts of Tutume and Ghanzi. The **Results:** correlate with the **Results:** of a similar study conducted in 2017 on key populations, which indicated that Ngami had the highest HBV at 10.5% (8.4-12.9) for Female sex workers and for Men who have sex with other men was at 15.2% (8.8-25). Additional research is needed to understand the prevalence of hepatitis B and C in the general population in Botswana. Hepatitis B is easily preventable with safe, available, and effective vaccines, which should be made available to the general populations in high-prevalence areas.

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Early and Durable Fibrosis Regression by Shear Wave Elastography in Chronic HBV Patients During Treatment With Nucleotide/ Nucleoside Analogue.

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Background: Shear wave elastography (SWE) is a noninvasive ultrasound-applied technique of hepatic fibrosis not requiring a special device. Successful therapy with nucleotide/ nucleoside analogue in chronic hepatitis B patients was associated with

hepatic fibrosis regression assessed by transient elastography (Fibroscan).
Aim: Assessment of liver fibrosis by SWE before and after one year treatment of chronic hepatitis B (CHB).

Methods: One hundred Egyptian patients with chronic hepatitis B who are positive HBsAg and HBV DNA for more than 6 months and candidate to treatment with nucleotide/ nucleoside analogue according to EASL protocol (patients with HBV DNA more than 2000 IU/ml and/or elevated ALT levels with significant fibrosis (F> 2)).Full assessment of enrolled patient was done with through history taking, laboratory investigation, HBV PCR, radiological assessment and SWE. Patients' laboratory characteristics and liver stiffness measurements (LSM) by SWE were evaluated at the beginning of treatment, 24 weeks and 48 weeks after treatment.

Results: Median age of patients was 40.5 years with (68%) males (p=0.00).
80 patients treated with Entecavir 0.5 mg, 10 treated with Entecavir 1mg and 10 treated with Tenofovir Disoproxil Fumarate 300 mg (p=0.102). Serum alanine aminotransferase (ALT) and aspartate aminotransferase (AST) levels decreased significantly after 24 week and 48 week in comparison to baseline (P value < 0.001). The mean LSM showed regression at week 24th (8.06±4.12kpa) and week 48th (7.76±4.62 kpa) in comparison to baseline (8.3±3.14kpa) (P value < 0.001).

Conclusion: SWE is a feasible, easily applicable noninvasive assessment method of liver fibrosis and treating chronically infected HBV patients with cirrhosis is a safe guard against progression of liver inflammation and fibrosis.

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The Work of Women in Hepatitis Africa WIHA in the Race Towards Eliminating Viral Hepatitis by 2030

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Problem Statement: Viral hepatitis is a silent killer with prevalence statistics varying from 3-8% in Africa; The low levels of health awareness and poor-health seeking behaviors are key drivers to increase in the transmission of viral hepatitis. it is commonly transmitted from Mother to Child, and from child to child. Thus, women are very essential as key change makers in preventing the spread and enhancing knowledge on hepatitis. The focus of Women in Hepatitis Africa is on screening, prevention, diagnosis, treatment and care as well as reinforcing the importance of screening and advocacy which is a key element in elimination of viral hepatitis.
Background: Women in Hepatitis Africa WIHA, is a foundation set up with the mission to impact Women, Children and People of Africa with Awareness, Knowledge and Skills to enhance the Prevention, Detection and Treatment of Viral Hepatitis aimed towards the elimination agenda. WIHA is the only known Women Hepatitis organization in Africa and beyond. WIHA is the first Africa organization to initiate the Preventing Mother to Child Transmission PMTCT in Hepatitis policy. WIHA runs a Women's Wellness center for Hepatitis. WIHA has trained over 4,500 African women from 18 countries, as Hepatitis Champions- Women Hepatitis Champions Training cuts across the disparities and socio-demographies including low literacy women, widows, never schooled women, indigenous women, young women and old women amongst others. Over 60,000 subjects have been screened for Hepatitis B and over 50,000 subjects for Hepatitis C respectively with informed consent, of which more than 60 percent of those screened are women.
Objectives:
1. To increase knowledge, awareness among different communities. It is therefore crucial to focus on dissemination and awareness raising activities in the low and middle income communities to build capacities for enhancement.
2. To reduce mortality, morbidity and associated socio-economic impact of viral hepatitis in Africa
3. To increase literacy and improve health-seeking behavior of the community

Methods: This was a descriptive quantitative study. A convenience sample of 3,000 people living in a low and middle-income community, a community in Lagos, Nigeria was used as case study. A self-completion Research Awareness Questionnaire was directed towards measuring the level of advocacy and awareness of the community about Hepatitis. Data acquired from the survey were used to quantify the statistical relationship between the levels of

confidence to whether an individual had received adequate information about viral hepatitis or had awareness education or training.

Results and **Conclusion**: The study shows that low and middle-income community have little knowledge about the transmission of viral hepatitis. The key obstacles to this low literacy are low advocacy level, society biases, religious belief, and reduced access to healthcare service. To address these obstacles, it is imperative that WIHA adopts a structured and community-based approach to enable and empower the community.

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Acquisition of HIV Among Patients With Chronic Hepatitis B: A Longitudinal Cohort Study From Ethiopia

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Background: Tenofovir disoproxil fumarate (TDF) monotherapy for patients with chronic hepatitis B (CHB) is efficacious, well-tolerated, and with no reports of HBV resistance. However, in CHB patients co-infected with human immunodeficiency virus (HIV), TDF monotherapy rapidly leads to selection of HIV drug resistance mutations. Therefore, it is important to assess the risk of HIV acquisition among CHB patients living in countries with high/intermediate HIV prevalence.

Methods: HIV-negative adults with CHB were enrolled in a treatment program at St. Paul's Hospital Millennium Medical College, Addis Ababa, in 2015. TDF was initiated in eligible patients based on modified EASL criteria. HIV screening was performed at baseline and at 3-month intervals in persons on antiviral therapy, and at least every 3 years in untreated individuals. The incidence rates of HIV per 1,000 person-years were calculated and compared using a chi-square test of difference.

Results: In total, 1303 patients were included in the program, of whom 291 (22.3%) started TDF therapy. None of the patients on antiviral treatment acquired HIV during 985 person-years of follow-up. Among patients ineligible for treatment, seven (0.7%) acquired HIV during 1581 person-years of follow-up. There incident rate of HIV in the non-treatment group was significantly higher than the treatment group (4.43/1,000 person-years vs. 0/1,000 person-years; p=0.037).

Conclusion: In this large cohort of CHB patients in Ethiopia, none of the patients on TDF monotherapy acquired HIV during five years of follow-up. Our findings support the continued use of TDF monotherapy in large-scale treatment programs of CHB in sub-Saharan Africa.

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Co-infection VHB/VHD chez les femmes enceintes dans la Région du Centre du Cameroun

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Contexte: Les virus de l'hépatite B (VHB), C (VHC), Delta (VHD) et de l'immunodéficience humaine (VIH) sont transmissibles de la mère à l'enfant et par voie sexuelle. La co-infection avec le VHC, VHD ou le VIH favoriserait la sévérité du l'hépatite B et augmente le risque de transmission verticale. Au Cameroun chez les femmes enceintes, la prévalence du VHB est de 6,4 %, celles du VIH, du VHD et du VHC sont respectivement de 8,5%, 4,0% et 0,8%, mais le taux de transmission verticale du VHB reste très peu connu. La co-infection VHB/VHD est la forme d'hépatite virale chronique la plus grave. Cette étude a permis de déterminer la séroprévalence de la co-infection de l'hépatite B avec le VHD, le VHC et le VIH chez les femmes enceintes, dans le but d'améliorer le Programme de Prévention de la transmission des virus de la mère à l'enfant au Cameroun.

Matériels et Méthodes: Cette étude transversale s'est déroulée de Janvier 2019 à Avril 2022, chez les femmes enceintes suivies dans 8 structures hospitalières localisées dans les zones urbaines, semi-urbaines ou rurales de la Région du Centre qui abrite la capitale Yaoundé du Cameroun. Mille neuf cent quatre femmes enceintes ont été incluses après consentement éclairé. Un questionnaire a permis de collecter les données sociodémographiques. La caractérisation sérologique de l'infection du VHB, la détection des anticorps anti-VIH, anti-VHC et anti-VHD ont été effectués par ELISA. Les femmes AgHBs-positif étaient orientées en consultation hépato-gastroentérologie et les non infectées vers un service de vaccination contre l'hépatite B. L'association entre les variables a été déterminée par chi carré.

Résultats: L'âge moyen des femmes était de 27,53 ± 5,68 ans et l'âge gestationnel moyen de 17± 6 semaines. Cinquante-six (2.9%) avaient reçu les trois doses du vaccin contre l'hépatite B et 90,0% faisaient le dépistage de l'AgHBs pour la première fois. Parmi les 1904 femmes enceintes enquêtées, 127 (6,7%) présentaient un résultat AgHBs positif. Parmi les cas AgHBs-positifs, 56,0% étaient à leur deuxième grossesse au moment du dépistage, 74,0% ne connaissaient pas le statut sérologique hépatite B de leur partenaire et 7 partenaires (5,5%) avaient déjà reçu leur vaccin. Quatorze (10.9%) avaient un résultat AgHBe positif. Les taux de co-infection VHB/VHD, VHB/VIH et VHB/VHC étaient respectivement de 29,8%, 11,4% et 0,9%. Par ailleurs, il a été noté une association entre le taux d'AcHBe et les co-infections VHB/VIH (p=0,003) et VHB/VHD (p=0,002).

Conclusion: Cette étude a révélé une faible couverture vaccinale associée à une prévalence de l'AgHBs de 6,7% chez les femmes enceintes ainsi que des taux élevés de co-infections VHB/VIH et VHB/VHD. Ceux-ci soulignent la nécessité d'élargir à l'échelle nationale la sensibilisation des femmes enceintes et la population générale puis d'améliorer les stratégies de prévention contre ces infections virales.
Mots clés : séroprévalence, co-infection VHB/VIH, VHB/VHC, VHB/VHD, femme enceinte.

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Prevalence of Occult Hepatitis B Among HIV Positive Individuals in Africa. A Systematic Review and Meta-Analysis

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The prevalence of hepatitis B virus among HIV seropositive individuals is believed to be high, and yet the disease remains neglected in many areas of the continent. Little is known about occult hepatitis in HIV individuals. This review assessed occult hepatitis B infection and it's prevalence in the different regions of the continent. It also determines its prevalence in the HIV population which is endemic in the region. Studies were searched from Cochrane, Google scholar, Pubmed/Medline, and African Journals online. Authors included cross sectional studies, case controls and cohorts, from 2010 to January 2021, following the preferred Reporting Items for systematic reviews and meta-analysis and participants, interventions, comparisons, outcomes and study design frameworks to develop the search strategy.

All studies had participants who were HIV positive, covering different regions of the continent. Risk ratio was used to measure effect size, and Stata 14 software for analysis. Eleven studies met the eligibility criteria, with 2567 participants. Overall prevalence of occult hepatitis B was 11.2%. regional prevalence was 26.5% for the south, 11% for the north, 9.1% for the east, and

8.5% for the western region. Approximately 10% of HIV seropositive individuals were co-infected with occult hepatitis B virus. Regionally, the prevalence was highest in the southern region and lower in the west. The prevalence of occult HBV infection was compared between the southern region and the other regions. It was higher in the south compared to East (risk ratio = 0.87, 95% confidence interval (0.83- 0.91)). It was also higher in the south compared to the north (risk ratio = 0.82, 95% confidence interval (0.79-0.85)), it was also higher in the south compared to the west (risk ratio = 0.85, 95% confidence interval (0.82- 0.87)). Public health measures and interventions are required to raise awareness, increase prevention, and reduce spread of the disease. More evidence based studies need to be carried out.

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Health Care Workers' Reactions to the Newly Introduced Hepatitis B Vaccine in Kalulushi Zambia: Explained using 5A Taxonomy

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Background: Hepatitis B virus (HBV) is a deadly disease that spreads quickly through blood and body fluids. Health care workers have a high risk of contracting HBV in health care settings and require the HBV vaccine as the best protection. However, uptake of the HBV vaccine remains low especially in Sub-Saharan Africa. This study aimed to explore the barriers and facilitators to uptake of the 3-dose HBV vaccine offered free of charge to HCWs and nursing students at their workplace in Kalulushi district, Copperbelt Province of Zambia.

Methods: We conducted a total of 29 in-depth interviews (IDIs), either in person or via telephone, with participants before and after they received the vaccines. Pre-vaccination IDIs (n=15) sought to explore expectations, fears and planned behaviour for completion of the vaccine while post-vaccination IDIs with completers (n=9) and non-completers (n=5) explored facilitators and barriers encouraging and hindering completion of the 3-dose HBV vaccination respectively. We analyzed the barriers and facilitators to full or partial vaccination using Penchasky and Thomas's (1981) 5 A's (access, affordability, awareness, acceptance, activation) taxonomy framework for vaccine hesitancy.

Results: All participants had access to the vaccine at their health facility made possible by the study team. However, HCWs who were out of station or had other commitments missed the vaccination, reportedly due to late notification of vaccination dates by the study team. All participants received the HBV vaccination free of charge, thereby making it affordable for all participants. However, some participants who had previously explored their options, reported that the HBV vaccination costs were beyond the means of HCWs and students. Regarding awareness, all participants were aware of HBV infection as an occupational hazard, however, HCWs felt that more sensitizations would be needed to increase awareness and knowledge of the HBV vaccine. Some felt that more was being done for other diseases such as HIV at the expense of HBV. Acceptability of the vaccine was high among all completers and some non-completers as they felt it was safe and offered them protection. However, one non-completer felt coerced to accept the first dose due to supervisor expectations and would have preferred to have been given more time to decide. Most felt that vaccination should be compulsory for HCWs while the others felt HCW vaccination should be voluntary. Lastly, activation (vaccine uptake) among non-completers was hindered by late or no notification of vaccination appointments as the main reason for not completing the full vaccination schedule. HCWs advised that for countrywide roll-out, at least one weeks' notification would be necessary for HCWs to plan and be mentally prepared to be at their workstations when the vaccination is taking place.

Conclusion: Overcoming obstacles of access and affordability makes it easier for HCWs to decide to take the vaccine, even with limited of knowledge of the Hep B vaccine. However, in order to ensure completion of the 3-dose vaccination schedule, HCWs need advanced knowledge of its benefits coupled with investment in timely reminders to accommodate their changing circumstances.

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EVALUATION OF SEROLOGICAL DETECTION OF HEPATITIS B SURFACE ANTIGEN, HEPATITIS C AND HUMAN IMMUNODEFICIENCY VIRUS 1 & 2 USING RAPID DIAGNOSTIC TEST KITS AND ELISA AMONG PREGNANT WOMEN AT 37 MILITARY HOSPITAL, GHANA.

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Prevention of vertical transmission is significant to reducing global incidence of Hepatitis B, Hepatitis C and HIV infections. Key to achieving this goal involves at birth prophylaxis of newborns on the premise of credible laboratory confirmed infection. Immunochromatographic RDT's remain widely used for the screening and diagnosis of HBV, HCV and HIV in resource limited settings because it is rapid, less expensive, provides shorter turnaround time and does not require sophisticated lab space and equipment set-up. Compared to indirect enzyme linked immunoassay as a reference standard, this study sought to evaluate the diagnostic utility of two RDT's in a single infection of HBV, HCV & HIV, as well as co-infected pregnant women using ELISA as a reference standard.

A total of 300 pregnant women were sampled by convenience at the Antenatal unit. Each blood/serum sample was screened for each infection using two recommended Ministry of Health commercial test kits. ELISA was performed using the ARCHITECT i1000SR immunoassay analyzer. Confirmation of HIV was done using Ora Quick ADVANCE Rapid HIV-1/2 antibody brush kit. A well-structured questionnaire was administered to assess risk factors, vaccine coverage and socio-demographic characteristics.
There was no significant difference in seroprevalence of HBV, HCV and HIV 1&2 in the RDT's compared to ELISA (p=0.4567, 0.3110, 0.3990 respectively). Using ELISA as the reference standard, the sensitivity of RDT 1&2 were between 71.4% - 96.5% and specificity (74.2%-99.3%). The sensitivity of RDT's were significantly reduced (50%. p=0.0140)) for HIV co-infected pregnant women against a specificity of 99.3%. The performance of RDT in detecting true positives was also reduced for antibody concentrations less than 1000 pg/ul. Smoking, alcoholism and number of sexual partners before marriage were not associated risk factors for disease carriage.

In conclusion the sensitivity and specificity of RDT's are still useful for screening for Hepatitis B and C infections in a resource limited setting. However, it may not be recommended for use in HIV-co-infected pregnant women.

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HBV and HCV Prevalence and Acceptability of the Plasma Separation Card for Viral Hepatitis Among People Attending an HIV Clinic in Kampala, Uganda

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Background: Hepatitis B virus (HBV) infection is a public health problem in Uganda. The prevalence of HBV varies across the country, with estimates reaching as high as 15% in northern Uganda. The prevalence of hepatitis C virus (HCV) is not well reported. Limited diagnostic capacity and lack of consistent availability of material across the country is a major barrier to accessing adequate screening, linkage to care, and treatment for viral hepatitis. The aim of this study was to evaluate the feasibility and acceptability of utilizing the plasma separation card (PSC) for viral hepatitis testing in an urban HIV clinic in Kampala and report the prevalence of HBV and HCV.

Methods: From 21 May to 9 July 2021, patients attending an HIV clinic in Kampala for regular care were invited to participate in this study and were offered screening for HBV (HBsAg) and HCV (anti-HCV) utilizing a sample (420µL) collected via capillary whole blood by trained nurses with the plasma separation card (Roche Diagnostics, California) and then analyzed in the laboratory. Participants were asked about the acceptability of this testing method, the level of pain experienced, the preferred sample collection duration, and their likelihood to recommend this sample collection method to others on a 5-point Likert scale and with open-ended questions. The number of correctly filled spots (out of three) was also collected. Sociodemographic variables were also collected and basic descriptive statistics were carried out using STATA v.16.1.

Results: Eighty-eight participants were offered testing and data for 70 are reported here. The majority (46;52.3%) were female and the mean age was 40.6 years (SD 10.2) with the majority of participants belonging to the Ganda (48; 54.6%) ethnic group. 11.4% (n=10) were HBsAg+ and none were positive for anti-HCV. The mean years living with an HIV diagnosis was 6.1 (SD 3.7) and all were on antiviral treatment. The mean sample collection duration was 10.2 minutes (SD 7.3) and the majority of respondents believe sample collection utilizing the PSC should take less than 15 minutes (58; 66.7%). Sixty-four 72.7%) PSC samples correctly had all three spots filled in and only one (1.1%) PSC had zero. Those who reported that the PSC was “easy” or “very easy” had more correctly filled PSCs (52;80%) compared to those who reported it was “not at all,” “not easy,” or “somewhat easy” (12;52.2%) (p=0.028). Pain was reported as “not at all” (n=59) or “somewhat painful” (n=23) by most and almost everyone (79;90.8%) would recommend the PSC for viral hepatitis testing to family and friends.

Conclusion: The PSC was found to be a very acceptable and feasible sample collection method for viral hepatitis screening in a resource-limited setting with high acceptability and low levels of pain reported by the participants. Overall, participants were satisfied with the method and would recommend it to others. This sample collection tool could help increase viral hepatitis testing in Uganda, which currently does not have routine HBV and HCV testing in place.

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Plasma RNA Load of Hepatitis Delta Virus in HBsAg-Positive Individuals Before Initiation of Treatment in Cameroon

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Background: Individuals co-infected with hepatitis B virus (HBV) and hepatitis D virus (HDV) present the most severe form of viral hepatitis. World Health Organization (WHO) reports that HDV affects 5% of people globally who have chronic hepatitis B. Studies in the general population in Cameroon have shown a high national prevalence of HBV infection of 8.3%, while HDV at 46.73% among HBsAg-positive individuals (2010 to 2016 study), and HDV at 4% among pregnant women (2011 to 2015 study). More so, very few studies have reported HDV RNA load in Cameroon and in particular the study of 2010 to 2016 reported an average HDV RNA load of 4.53logIU/mL in untreated individuals co-infected with HBV. Our study, therefore, aimed at estimating the prevalence of HDV infection and plasma HDV RNA load among HBsAg-positive individuals in the Centre Region of Cameroon.

Methods: A cross-sectional study was conducted from 2019 to 2022 respecting ethical norms with written informed consent of each participant. The study population comprised of adults attending antenatal clinic and infectious disease Unit in hospitals situated in the urban, semi-urban or rural locations in the

Centre Region of Cameroon. Following informed consent, 2647 individuals were screened for HBsAg in plasma by rapid diagnostic test and reactive samples were confirmed using ELISA. Negative cases were referred for hepatitis B vaccination (if not vaccinated) and 140 HBsAg-positive cases were tested for HDV antibody by ELISA and confirmed by RT-PCR. HDV RNA viral load and HBV DNA load were estimated using a commercial kits. These samples were also tested for human immunodeficiency virus (HIV) and hepatitis C virus (HCV) antibodies.

Results: Of 2647 samples, 162 were positive for HBsAg, giving a prevalence of 6.1%, 47 were co-infected with HIV (1.8%) and 4 co-infected with HCV (0.15%). The mean age of the HBsAg-positive individuals was 28.46 years, with a female sex predominance due to the high number of pregnant women in the study population.
Among the 140 HBsAg-positive cases tested for HDV antibodies by ELISA, 41 were reactive (seroprevalence of 29.3%). Seroprevalence of HBV/HDV/HIV was 4.3% and for HBV/HDV/HCV it was 0.7%. Only 22 of 41 (54%) had detectable HDV RNA load in the range of 1.69 to 5.55 logIU/mL and HBV DNA load from 1.93 logIU/mL to 2.77 logIU/mL.

Conclusion: The study showed a high seroprevalence (29.3%) of HDV infection in the Centre Region of Cameroon. Therefore, it is important to routinely screen chronic hepatitis B patients for HDV infection. However, with 54% rate detectable HDV RNA load, there is need to develop a cost-effective diagnostic algorithm for HDV infection in HBsAg-positive individuals and for follow-up.

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High Incidence and Persistence of Occult Hepatitis B Virus Infection Among People With HIV in Botswana

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Background: About 2.7 million people with human immunodeficiency virus (PWH) worldwide are coinfected with hepatitis B virus (HBV), with 71% being from sub–Saharan Africa. HBV/HIV coinfection results in worse disease outcomes than either infection alone. Routine HBV screening is through the detection of hepatitis B surface antigen (HBsAg), however, occult HBV infection (OBI) is missed by this algorithm. OBI, described as detectable HBV deoxyribonucleic acid (DNA) in the absence of detectable HBsAg is transmissible, can cause liver disease including hepatocellular carcinoma and is common among PWH. In Botswana, we found a high OBI prevalence of 24% among PWH initiating antiretroviral therapy (ART) and 6.6% in pregnant women. There is limited data on the natural progression of OBI owing to the few longitudinal studies on OBI. We aimed to determine the incidence and clearance of OBI in PWH in Botswana.

Methods: Archived plasma samples from a longitudinal HIV natural disease progression study which followed up participants for at least 24 months (2004 –2009) were used. Participants with available follow-up plasma samples were selected for this study. HBsAg screening was done by enzyme-linked immunosorbent assay (ELISA) and all HBsAg negative samples were screened for OBI using an in-house real-time polymerase chain reaction (qPCR) assay at yearly intervals.

Results: Demographic data were available for 126 participants with 32/126 being male (25.4%). The median age of participants was 34 years (IQR: 29 – 42). Median CD4+ T-cell count was 423 cells/uL (IQR 312 – 543) while log10(HIV viral load) was 4.10cps/mL (IQR: 3.59 – 4.75). We report a HBsAg prevalence of 9/126 [7.1% (95% CI: 3.8 – 13.0) at baseline and an OBI prevalence of 21/95 [22.1% (14.9 – 31.4). Two of the 9 HBsAg-positive participants lost the HBsAg at the year 1. Out of the 21 OBI-positive participants, 20 were screened for OBI at the year 1 time-point and 9 of those had persistent OBI (45.0%). Sixty-five baseline OBI-negative participants were screened for HBV DNA at year 1 and 17 OBI incident cases were observed, [26.2% (17.0 – 38.0). Of the 17 incident cases, 5 were screened at year 2 and 2/5 (40.0%) persisted. Twenty-seven of the OBI-negative participants from year 1 were screened for HBV DNA at year 2 and 12 OBI

incident cases were observed, [44.4% (27.6 – 62.7). Total OBI incident cases over a 2-year period were 29 and one of the OBI incident cases was a participant who lost HBsAg.

Conclusion: There was high prevalence, incidence and persistence of OBI in this study among PWH not on ART in Botswana. There was minimal association of OBI with prior HBsAg positivity. OBI screening in PWH should be considered. Further studies on factors associated with OBI persistence and the long-term clinical impact of OBI are warranted

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KNOWLEDGE, ATTITUDES AND PREVALENCE OF HEPATITIS B AMONG HEALTHCARE WORKERS IN SURULERE LOCAL GOVERNMENT AREA OF LAGOS STATE, NIGERIA.

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Background: Hepatitis B virus (HBV) is a member of the Orthohepadnavirus genus; mainly transmitted through exposure to infected body fluids. In Nigeria, despite the availability of a safe and effective vaccine, the prevalence of HBV remains very high (est. 20 million cases) and the growing burden is believed to be driven by low awareness. Healthcare workers (HCWs) who are routinely exposed to mucosal, blood and blood products of patients are at increased risk of contracting and transmitting this virus. It is therefore necessary to assess their knowledge and attitudes toward HBV and the prevalence of HBV infection among them.
exposed to different body fluids are at an increased risk o

Objectives of Study
To assess Knowledge, Attitudes Practice and Prevalence of Hepatitis B among healthcare workers in Surulere Local Government Area of Lagos State, Nigeria and determine if there is a correlation between knowledge of HBV and burden of disease among the study population.

Methods: A cross sectional study was carried out between February and September 2021. A simple random sampling method was used to select study participants. A total of 326 HCWs were admitted into this study. Knowledge on the routes of transmission, measures for prevention and attitude towards HBV were evaluated using a well-structured questionnaire. Hepatitis B surface antigen (HBsAg) serology was determined using the HBsAg ELISA kit (HYTECH). Data were analysed using SPSS V.20.

Results: Among the HCWs who participated in this study, 269 (82.6%) had heard of HBV, 234 (71.7%) of them had adequate knowledge on the route of HBV transmission, and 247 (75.8%) were aware of the availability of an effective vaccine against HBV. Medical doctors were the most knowledgeable (76.5%) followed by nurses (62.8%) even though stigmatization was most common among nurses (59.1%). The prevalence of HBsAg was high (36, 11.0%). Overall, about 90% of HCWs invited to participate in this study responded.

Conclusion: The knowledge on the route of HBV transmission was fair, but the level of stigmatisation of HBV-infected patients and the prevalence of HBV infection among HCWs were considerably high in this study despite a fair knowledge on the availability of a safe and effective HBV vaccine. Educational and behavioural change programs on HBV should be organized for HCWs to improve their attitudes towards HBV patients. HBV vaccination must be encouraged among HCWs. Further studies are required to sufficiently establish an association between knowledge and attitudes of HCWs and the burden of HBV infection among them.

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Assessment of Liver Fibrosis With Shear Wave Elasticity Image in Patients With Chronic HBV.

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Background: Shear wave elastography (SWE) is a non-invasive, easy and rapid technique that enables the direct visualization of elasticity measurements. Some patients with chronic HBV in whom the disease is not active, are not treatment candidates and antiviral therapy can be deferred, such as those with low HBV DNA, minimal or no fibrosis and persistently normal ALT levels. At National Liver Institute, Menoufiya University, patients with low HBV DNA level with normal ALT levels and without significant fibrosis (F< 2) undergo regular follow up.
Aim: Assessment of liver fibrosis by SWE in chronic HBV infected patients not candidate to treatment.

Methods: One hundred Egyptian patients with chronic hepatitis B who are positive HBsAg and HBV DNA for more than 6 months and scheduled for regular follow up, recruited from the outpatient clinic at National Liver Institute (NLI), Menoufia University. Patients' laboratory characteristics, fibrosis biomarkers, namely Fibrosis-4 (FIB-4) index and AST/platelet ratio index (APRI) and liver stiffness measurements (LSM) by SWE were evaluated at baseline. SWE was performed every 6 months interval for one year to assess liver fibrosis.

Results: Median age of patients was 35.5 years (50%) males (p<0.05). Fibrosis-4 (FIB-4) index and AST/platelet ratio index (APRI) not correlate with degree of fibrosis assessed by Shear wave elastography (p value = 0.104) and (p value = 0.190). Serum aspartate aminotransferase (AST) and alanine aminotransferase (ALT) levels not significantly changed at week 24th and week 48th from baseline (p value =0.701). Shear wave elastography index was (4.1±0.71kpa) at the beginning of study, (4.21±0.52 kpa) at 24th week and (4.26±0.62 kpa) at 48th week of follow up, p value = 0.035.

Conclusion: No significant fibrosis occurred in chronic hepatitis B patients, younger age with persistent normal liver enzymes, these criteria were validated by SWE. Only regular follow up is required.

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Feasibility and Acceptability of Liver Fine Needle Aspiration for Longitudinal Analysis of Hepatitis B Virus Immune Responses in Zambia

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Background: Historically, it has been difficult to define precise mechanisms that underpin the hepatitis B virus (HBV) natural history because the site of infection – the liver – is challenging to access, particularly on a longitudinal basis. Liver core biopsy is increasingly rare; clinical care and research typically rely on peripheral blood sampling, which permits analysis of viral markers but only a limited understanding of virus-host interactions. Liver fine needle aspiration (FNA) has been developed to analyze intrahepatic immunology, and in people with HBV, it revealed unique immune cell types that are not found in peripheral blood. Because a significantly smaller needle is used, FNA has a better safety profile than core biopsy and may be more acceptable to patients. Data from sub-Saharan Africa (sSA) are lacking. We describe our preliminary experience with liver FNA in Zambia.

Methods: Treatment-naïve non-pregnant adults (18+ years) in Lusaka with either HBV/HIV coinfection or HBV monoinfection that were eligibile for antiviral therapy were enrolled in a cohort. We excluded from FNA patients with hemoglobin <8, platelets <80,000, international normalized ratio >1.3, ascites, or liver

lesions. FNAs were performed at a referral hospital by two specialist physicians experienced in percutaneous liver core biopsy. After file review and physical examination, using a handheld ultrasound, the puncture site was marked. Under local anaesthesia, a Qunicke-type spinal needle (25-gauge, 3.5-inch) was inserted into the liver parenchyma, the stylet was removed, and a 10-ml syringe was connected. While aspirating, the needle was removed. Three additional passes were made. At the laboratory, liver aspirates underwent RBC depletion and cell counting. 20,000 cells were loaded in a Seq-well array. Post-procedure, patients were monitored for 1 hour and phoned the next day. In those with baseline, FNA was repeated following 1 year of tenofovir-based antiviral therapy.

Results: From October 2020 to April 2022, 107 patients enrolled in the cohort (62 with HIV/HBV coinfection, 45 with HBV monoinfection), and of them, 78 underwent baseline FNA. Of those not undergoing FNA, 13 withdrew or were lost to follow-up, 4 had liver lesions, 2 declined out of fear, 1 had thrombocytopenia, 1 had anemia, and 8 are pending. Post-FNA, 31 (39.7%) were given oral paracetamol 1 gram for pain. Within 1 week post-procedure, 6 (7.7%) were reviewed at the clinic for symptoms; however, none required interventions beyond paracetamol. Each FNA pass yielded 5,000 – 20,000 cells. After frozen shipping to a laboratory in the United States, FNAs underwent single cell RNA sequencing and flow cytometry, and a range of immune cell subsets were observed. Analysis is ongoing. To date, among 25 patients invited for a repeat FNA, 13 completed it, 6 declined, usually due to pain with the initial FNA, and 6 are pending.

Conclusion: With appropriate training and precautions, liver FNA is a feasible and acceptable approach to liver sampling in sSA. Thus far, the majority with an initial FNA have agreed to repeat it, providing unique opportunities to investigate intrahepatic immunology in the context of HBV infection.

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Absence de correlation entre profil des cytokines proinflammatoires plasmatiques et la fibrose hépatique chez les patients mono et coinfectés par le VIH et le VHB ainsi que les témoins sains au Mali.

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Objectif: Le virus de l'hépatite B (VHB) n'a pas de pouvoir cytopathogène direct sur les hépatocyes. Ce travail a pour objectif d'étudier les différences de taux plasmatiques des différentes cytokines proinflammatoires entre les sujets mono et coinfectés par le VIH et le VHB comparés à des sujets sains et de corréler ces taux à la fibrose hépatique.

Méthodologies: des sujets appartenant à quatre groupes ont été inclus : coinfectés par le VIH et le VHB ; infectés par le VHB ou le VIH seul ainsi que des témoins sains dans le service des Maladies Infectieuses du CHU du Point G et à la banque de sang. Le taux plasmatique de cytokines pro inflammatoires : Il17, IFN, TNF ; IL10 ; IL6 ; IL4 et IL2 ont été dosé par la technique cytomètrique au Centre de recherche Universitaire de Recherche clinique de Bamako. Les taux plasmatiques moyens ont été comparées entre groupes par le test non paramétrique de Friedmann et la corrélation entre taux de cytokine a été faite par régression linéaire. Le seuil de significativité p≤0,05.

Résultats: Le taux plasmatique d'IL17 était significativement plus élevé chez les sujets coinfectés, suivi par les sujets VIH, les témoins sains et les cas d'hépatite B soit respectivement (13,5±9,4 ; 2,3±1,5 ; 0,5±1,3 et 0,06±0,03 pg/ml). Le taux plasmatique d'IFN était significativement plus élevé chez les sujets coinfectés, suivis les cas d'hépatite B, par les sujets VIH et les témoins sains soit respectivement (8,3±13,5 ; 4,3±3,4 ; 4,3±4,0 et 0,9±2,5 pg/ml). Par contre le taux plasmatique de TNF était significativement plus élevé chez les témoins sains que les sujets VIH que les sujets coinfectés que les cas d'hépatite B soit respectivement (58,8±268,2 ; 54,5±189,7 ; 8,2±13,5 et 3,2±3,2 pg/ml). Le taux plasmatique d'IL10 était significativement plus

élevé chez les sujets coinfectés, suivis par les sujets VIH, les cas d'hépatite B et les témoins sains soit respectivement (24,7±135,8 ; 4,7±7,4 ; 1,8±3,2 et 0,7±1,6 pg/ml). L'IL6 plasmatique aussi avait un taux significativement plus élevé chez les sujets coinfectés, mais suivis par les témoins sains puis les sujets VIH et finalement les cas d'hépatite B soit respectivement (615,1±2445,8 ; 5,3±14,3 ; 2,4±2,2 et 0,2±0,3 pg/ml). Quant aux taux plasmatiques d'IL4 et d'Il2 ce sont les sujet VIH qui avaient les plus élevés : pour l'IL4 ils étaient suivi des coinfectés, puis des témoins sain et finalement les cas d'hépatite B ; pour l'IL2 ils étaient suivi des cas d'hépatite B, puis des témoins sain et finalement les sujets coinfectés. La charge virale du VHB était comparable entre les sujets mono et coinfectés. Il n'y avait de relation statistiquement significative entre la fibrose et le taux des cytokines pro inflammatoires (p>0,05). Cependant il semble y avoir plus de fibrose parmi les sujets mono infectés par le VHB.

Conclusion: dans cette étude cas témoin, le taux de cytokine pro inflammatoire plasmatique varie significativement selon le type d'infection. Aucune corrélation n'a pu être mis en évidence entre la fibrose hépatique et le taux de cytokine.

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L'hépatite B-delta : aspects diagnostiques et thérapeutiques au centre hospitalier universitaire Yalgado Ouédraogo de Ouagadougou (Burkina-Faso)

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L'hépatite delta, est très peu souvent recherchée chez les patients infectés par le VHB dans notre contexte. Pourtant l'association du VHB/VHD entraine une plus forte morbidité et mortalité.

Objectif: étudier les aspects diagnostiques et thérapeutiques de l'hépatite B-delta au Centre Hospitalier Universitaire Yalgado Ouédraogo.

Méthodes: il s'est agi d'une étude rétrospective réalisée de Janvier 2006 à Mars 2017 (11 ans). Ont été inclus, les patients porteurs du virus de l'hépatite B et ayant une sérologie delta positive. La quantification de l'ADN du virus de l'hépatite B a été réalisée par PCR en temps réel (Roche CobasTaqMan) avec un seuil de détection de 10 UI/mL. La quantification de l'ARN du virus delta a été réalisée par amplification génique (RT-PCR) avec un seuil de détection de 100 UI/mL.

Résultats: Au total 499 patients porteurs du virus de l'hépatite B ont réalisé la sérologie delta, elle était positive chez 11 patients (2,2%) dont 7 hommes et 4 femmes. la moyenne d'âge était de 42,5 ± 7,9 ans avec des extrêmes de 30 et 55 ans. La charge virale B a été réalisée chez tous les patients : elle était détectable chez 09 patients et indétectables chez 03 patients. La quantification de l'ARN du virus delta a été réalisée chez 10 patients, elle était détectable chez 06 patients. Une réplication simultanée des virus B et delta était présente chez 05 patients (45,4%). L'ictère a été la circonstance de découverte chez 03 patients. L'examen physique était normal chez 10 patients. Une cirrhose a été découverte chez 02 patients dont deux confirmées par la ponction biopsie hépatique. Sur les 05 patients traités par le ténofovir, 04 avaient une durée de traitement ≥ 03 ans et la réponse virologique complète (VHB) était obtenue chez tous (100 %). Un patient a été traité pendant 58 semaines contre le virus de l'hépatite delta. A l'arrêt du traitement, il avait une réponse virologique et biochimique partielle.

Conclusion: Notre étude a mis en évidence une prévalence faible de l'infection B-Delta dans notre contexte. Malgré les difficultés liées à la prise en charge adéquate de cette co-infection (la non disponibilité sur place des tests diagnostiques et leur coût élevé, le coût élevé de l'interféron pégylé) les praticiens doivent savoir y penser.

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HBV Immuno-Virology in HIV-Infected Patients in Mali

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Background: HIV and HBV co-infection is common in sub-Saharan Africa due to shared routes of transmission. HIV accelerates the progression of HBV-related liver disease, which is one of the leading causes of death in persons with HIV. This study sought to compare the characteristics of patients with HIV/HBV coinfection in two clinical settings in Bamako, Mali, a sub-Saharan West African country.

Methods: A coss sectional study comparing demographic, clinical, and laboratory characteristics of patients hospitalized for divers reasons at the Point G Teaching Hospital of Bamako, Mali (Group 1) and outpatients at the HIV Community Clinic (CESAC).

Results: A total of 1108 HIV patients were enrolled. Of these, 99 were HBsAg+.
Group 1: We retrospectively measured HBsAg levels from 203 HIV positive patients hospitalized at Point G teaching hospital. We found 33 (16.2%) HBsAg positive patients. A majority was men (22/33; 66%) with an average age of 41± 12y/o, an average CD4 count of 39.8±31 cells/mm3, serum creatinine at 191±391 mol/L, ALT 53±30 UI/L, and a mean duration under ARV 13±28 months. Out of the 33 HIV/HBV co-infected patients, four were treatment-naïve and 21 (63.6%) under Tenofovir+Lamivudine+Efavirenz (TLE). Only 19/33 had an HIV VL available and all detectable with an average of 5log10±5,5log10 copies/mL.
Group 2: Patients from a community care center (CESAC) for outpatient HIV follow-up were offered HBsAg screening. Of 905 patients tested, 66 (7.4%) had a positive HBsAg level. Of the 66, 39/66 (59%) were women with an average age of 39±13, an average CD4 count of 631±316 cell/mm3, serum creatinine of 89±18mol/L, ALT 23±6 IU/mL and a mean duration under ARV 125±258 months. All patients were treated and 73% under Tenofovir+Lamivudine+Dolutegravir (TLD). Fifty patients had an available VL; 36/50 (%) were undetectable (<40 copies/mL) and a mean VL of 5log10±5,3log10 copies/mL for the 14/50 (28%) patients with a detectable HIV VL.
We assessed HBV VL available in patients shown an average 3.27 log10 (IQR 1.87; 4.71) of HBV DNA in group 1 (33/33), compared to 2.65 log10 in group 2 (16/66).
The analyzes show a significant difference between the 2 groups for the HBsAg seroprevalence, CD4 count, the duration of treatment as well as the ALT level (p=0.0005, p=0.000, p=0.000 and p=0.002 respectively).
Indeed, hospitalized patients compared to patients receiving care in the outpatient clinic were significantly more immuncompromised and with less control of their HIV/HBV, despite similar proportions of patients receiving ART. The difference in ALT is associated with HBV or other causes among the hospitalized patients could not be determined.

Conclusion: This work shows a high level of AgHbs positive in very immunocompromised hospitalized HIV-infected patients and an alteration of their hepatic enzyme ALT. These data support the interest of strengthening in patients co-infected with HIV and HBV, the adherence to treatment, an optimized therapeutic regimen and appropriate virological monitoring to reduce mortality in this population.

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Prevalence and Evaluation of Hepatitis B Viral Replication in Pregnant Women With and Without HIV Coinfection in Mali

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Background: Pregnant women with a high Hepatitis B Virus (HBV) DNA viral load (VL) can still transmit HBV to the fetus or newborn, despite receiving hepatitis B immunoglobulin (HBIg) and vaccination of the newborn at birth. Although HBV infection is common in sub-Saharan Africa, data on maternal virological outcomes are limited.

Methods: In this longitufinal study, we assessed the sero-prevalence of hepatitis B surface antigen (HBsAg) from pregnant womens' samples obtained during antenatal visits between January and May 2022 at a public health clinic in Bamako, Mali. HBsAg postitive samples were then tested for HBV VL, with a high VL defined as >2000 IU/mL.

Results: Of the 998 pregnant women included, 84 (8.4%) had a positive HBsAg. Of these 84, median age was 27 yrs (interquartile range [IQR], 23-32); most were married (98%) and homemarkers (73%); and 18% were primiparous, however, only 10% knew their HBV serological status before the current pregnancy. Alanine aminotransferase (ALT) level was < 35 IU/L in 92% of cases and 26 (34.6%) had a VL > 2000 IU/mL, including 5.3% with a VL > 200 000 IU/mL. Three (3.5%) were HIV co-infected of which two had a detectable HIV VL >40 and one had HBV DNA at 1500 IU/ML. There was no statistically significant relationship between age, parity, and VL ($\chi 2$ test, respectively, p=0.67; p=0.76).
At present, 32/84 women have delivered at term and 31/32 received the first vaccine dose within 24 hours of delivery. However, HBV immunoglobulin must be purchased by the patient and only 23/32 received immunoglobulin.

Conclusion: This study characterizes HBV infection among pregnant women in Mali. HBsAg seropositivity is high and a third of women had HBV VL >2000 where antiviral treatment would be indicated to prevent mother to child transmission of HBV. These data confirm the need for hepatitis B vaccination and treatment programs for women of child bearing age in sub-Saharan countries like Mali, as well as, routine HBs Ag screening of pregnant women.

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Strengthening HBV PMTCT: Impact of an Integrated Antenatal Clinic Testing Opt-Out Approach and Increased Patient & Healthcare Worker Knowledge on HBV Case Finding in Nasarawa State, Nigeria

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Background: Vertical transmission of hepatitis B virus (HBV) from mother to infant is the most common mode of transmission and leads to chronic disease in about 90% of cases. Adequate protection requires timely administration of the birth dose vaccine within 24 hours of birth and subsequently, three additional doses at 4-week intervals. HBV is endemic in Nigeria with a prevalence of 8.9% translating to an estimated 16M chronically infected persons. HBV birth dose vaccine coverage remains low at 52% while timely administration within 24 hours is estimated among only 13% of live births. Nasarawa State, Nigeria exhibits seroprevalence rates of 11%, and the state government is committed to eliminating mother-to-child transmission through screening and ensuring timely vaccine uptake. However, with HBV services being largely out-of-pocket at approximately $475 annual treatment costs, strategic interventions are required to improve HBV screening uptake at antenatal clinics (ANC), to initiate prevention of mother-to-child transmission (PMTCT). This study aimed to improve uptake of birth dose vaccination in Nasarawa.

Methods: An observational study was conducted across 6 primary health centres in Nasarawa using a pre/post-design. A retrospective audit (December 2020–February 2021) of ANC records along with outcomes of healthcare worker (HCW) interviews revealed cultural factors and poor patient and HCW knowledge as key factors limiting uptake of HBV PMTCT services. Using human-centred design, state program leads, HCWs, and pregnant/breastfeeding mothers reviewed the data, identified gaps, and walked through the empathy, define, and ideate phases, performing root-cause analysis to define impactful interventions. These included 1) building ANC and laboratory staff knowledge on the need for improved HBV case finding, PMTCT, and timely birth dose vaccination 2) instituting a peer-led learning approach to cascade knowledge 3) improving awareness through the integration of HBV messaging

into routine ANC counselling in the first and third trimesters of pregnancy and 4) adopting an opt-out approach by integrating HBV testing into baseline investigations at ANC enrolment. HCW interviews along with a retrospective audit of ANC records post-intervention (October–December 2021) assessed the proportion of ANC attendees exposed to HBV messaging and who paid and accessed HBV screening, and HCW knowledge around HBV testing.

Results: At baseline, ANC group health talks lacked HBV content, while at endline, 100% of the sessions contained appropriate HBV messaging, reaching approximately 6,370 pregnant women.
There was a 100% increase in the proportion of HCWs understanding the need for HBV ANC screening and referrals for positives, importance of timely HBV birth dose vaccination, and cessation of grouped vaccinations which increased risk of missed opportunities.
A 42% point increase was observed (baseline: 62%, endline: 88%) in out-of-pocket HBV screening amongst newly enrolled pregnant women.
A 152% increase was observed (baseline: 26%, endline: 67%) in coverage of timely birth dose vaccination.

Conclusion: In resource-limited settings where access to HBV services is largely out-of-pocket, improving HCW knowledge, integrating HBV messaging into ANC counselling sessions, and adopting an opt-out testing approach appeared to be effective strategies to improve HBV case finding, linkage to care, and birth dose vaccination coverage.

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Hepatitis B Surface Antigen Loss In Chronic Hepatitis B Virus and HIV Co-Infections In Individuals on Antiretroviral Therapy In Botswana

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Background: Hepatitis B virus (HBV) is a global health issue with approximately 296 million people infected with chronic hepatitis B (CHB). Human immunodeficiency virus (HIV) and HBV co-infection is associated with worse clinical outcomes such as rapid progression to end stage liver disease. Antiretroviral therapy (ART) with anti-HBV properties may occasionally result in hepatitis B surface antigen (HBsAg) loss and suppress HBV viral load among CHB infected patients. There is currently no cure for HBV hence HBsAg loss is the ideal endpoint of treatment due to improved clinical outcomes. However, there is sparse data on HBsAg loss among CHB infected patients due to ART in Botswana. Therefore we sought to determine HBsAg loss due to ART and predictors of HBsAg loss among CHB infected people with HIV (PWH) in Botswana.

Methods: This was a retrospective longitudinal study which utilized HBsAg positive archived plasma samples from PWH at baseline, year 1 and year 2 from the Botswana Combination Prevention Project (BCPP) study (2013-2018). Enzyme linked Immunosorbent assay (ELISA) was used to screen baseline samples for Immunoglobulin M for HBV core antibody (anti-HBc IgM) and HBV e-antigen (HBeAg). The samples were further screened for HBsAg at year 1 and year 2 using Murex version 3 as per the manufacturer's instructions. The COBAS Ampliprep/ COBAS Taqman HBV test version 2.0 was used to quantify HBV deoxyribonucleic acid (DNA) at different time points. Statistical comparison between participants with the HBsAg loss and those without was done using the Wilcoxon rank-sum test, Fisher's exact test and Chi squared test where appropriate and P values <0.05 were considered statistically significant. Predictors of seroclearance were assessed using logistic regression model.

Results: Of the 141 HBsAg positive participants with follow-up samples, 4.3% (6/141) had acute infection while 95.0% (134/141) [95 % CI, 90.1-97.6] participants had CHB infection. However, only 42.6% (60/141) participants were screened for HBeAg at baseline resulting in 10% (6/60) [95% CI, 4.7-20.2] testing positive for HBeAg. We report a HBsAg loss of 7.1% (10/141) [95% CI, 3.9-12.6] among HBeAg negative CHB participants in year 1 with no further HBsAg loss in year 2. Furthermore, HBsAg loss due to ART was

reported in 5.7% (8/141) participants, four of whom were on Tenofovir, one on Lamivudine containing ART while the ART regimen was not specified in the remaining three participants. We also report spontaneous HBsAg loss of 1.4% (2/141) [95%CI, 0.4-5.0] in two CHB infected participants who were ART naïve throughout the study. HBsAg loss was found to be independent of HBV DNA, HIV viral load, CD4 count, age and sex.

Conclusion: We report 5.7% HBsAg loss due to ART among CHB infected participants who were HBeAg negative. HBsAg loss was found to be independent of all clinical variables assessed. Monitoring of CHB infected patients is recommended and future studies can be conducted on HBsAg loss in mono-infected patients. Studies can also focus on the possible correlation between HBeAg status and HBsAg loss since all participants that lost the HBsAg were HBeAg negative.

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A Cross-sectional Study on the Prevalence of HIV and HBV Co-infection among Students of a Tertiary Institution in Ekiti State, South West Nigeria

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Nigeria aims to eradicate public-health threats such as HIV/AIDS and Hepatitis B virus (HBV) by 2030. However, to achieve the short- and medium-term response target, and end the epidemic by 2030, there is the need to monitor and estimate the population level of HIV and HBV epidemic trends to boost the country's strategic framework's chances of success.

Hence, we uncovered the prevalence of HIV and HBV among newly admitted students of a tertiary university in southwestern Nigeria. Full-time newly admitted undergraduate students of the university were screened for HIV and HBV infections between the years 2015 to 2017. Four mL of the blood samples was collected from each subject into EDTA bottles and were allowed to stand for one hour. Samples were allowed to separate into plasma and corpuscles on the bench. HIV screening was done using an immunochromatographic method via a highly sensitive kit DETERMINE® (Abbott Diagnostic Division, Netherlands) and were later confirmed using Enzyme Linked Immunosorbent Assay ELISA Uni-Gold® manufactured by Trinity Biotech Plc, Ireland. HBV screening was carried out using an immunoassay method for the detection of the hepatitis B surface antigen (HBsAg). Out of the 4,623 subjects recruited, 2545 were male while 2078 were female. The overall prevalence of HIV was found to be 0.13% while that of HBV was 2.23%.

Conclusively, although HIV was found to be less prevalent among the study as compared to HBV; however, the higher transmission propensity of HBV necessitates even more urgent efforts to eradicate the infectious diseases.

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Characteristics and Retention in Care for Patients Enrolled in a Hepatitis B Care and Treatment Program in Rural Sierra Leone

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Background: Mortality attributable to hepatitis B infection is highest in rural Sub-Saharan Africa, largely due to barriers accessing testing and treatment services. In 2019, the Sierra Leone Ministry of Health and Sanitation, in collaboration with Partners In Health, established the first dedicated free-of-charge hepatitis B clinic in the country within the rural Koidu Government District Hospital. We report baseline characteristics as well as one-year retention in care for patients enrolled.

Methods: We conducted a retrospective cohort study via chart review of all patients enrolled in the hepatitis B clinic between April 30th 2019 to April 30th 2021. Patients were eligible for one year follow-up if enrolled before February 28, 2020. The variables collected included patient demographics, clinical assessments, and laboratory results. A complete baseline evaluation was defined as assessing platelets, hepatitis B viral load, HCV and HIV co-infection, ALT, AST, and liver ultrasound. Treatment eligibility was determined based on Sierra Leone national guidelines adapted from the 2015 WHO Hepatitis B Treatment Guidelines. The diagnosis of cirrhosis was defined as: 1) the presence of clinical criteria of decompensated cirrhosis, 2) aspartate-aminotransferase-to-platelet (APRI) ratio > 2, or 3) ultrasonographic findings consistent with cirrhosis. Retention in care was defined as a documented follow-up visit at least one year after enrollment.

Results: In total, 648 individuals were enrolled in care. Median age was 31 years (IQR 23-42), and 296 (45.7%) identified as women. The majority of patients were referred from a public outpatient primary care clinic (45.8%). Co-infection with HIV or HCV was documented among 11 (1.7%) and 28 (4.3%) individuals, respectively. Among the 648 individuals enrolled, a complete baseline evaluation was documented for 205 (31.6%). Baseline hepatitis B viral load was documented for 407 individuals, among whom, 52 (12.8%) had viral load > 20,000 IU/mL, while 46 (8.4%) of the 548 patients with liver function tests assessed had an elevated ALT above 80 IU/L. Of 615 individuals for whom cirrhosis status was determined, 59 (9.6%) had cirrhosis at enrollment. Of patients with cirrhosis, 34 (57.6%) had decompensated liver failure. Of the 648 individuals enrolled, 123 were eligible for treatment per the Sierra Leone guidelines, of whom 79 (64.2%) were initiated on treatment. A total of 278 patients were eligible for a one-year follow-up visit, of whom 139 (50.0%) presented. Of those eligible for one-year follow-up, 23 (67.7%) of 34 patients started on treatment at baseline presented, while 116 (51.8%) of 224 participants not on treatment at baseline were retained at one year. At year one year, 3 additional patients were started on treatment.

Conclusion: We reported baseline demographics from a rural hepatitis B treatment clinic among a population at highest risk and difficult to reach. Although we demonstrated the feasibility of hepatitis B diagnosis, treatment and evaluation in this rural West African setting, further research further research is needed to understand the specific challenges among this population to guide targeted interventions to improve retention in care. Further, evaluation of clinical outcomes in this cohort is needed to best inform programmatic implementation and scale-up.

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Seroprevalence and Associated Risk Factors for Hepatitis B Virus Infection Among Barbers and Their Clients in Two Cities in Cameroon

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Background: Hepatitis B virus (HBV) infection is a serious public health problem in Africa and worldwide. Barbers are regularly in contact with the blood fluid of their clients, who could develop skin cuts and abrasions during shaving practices. In addition, HBV is 50–100 times more infectious than HIV and 10 times more infectious than (HCV), hence has a lower infectious dose. Furthermore, it has been documented that HBV can survive outside the body for seven days or more on tabletops, workbenches and other instruments, making it highly transmissible through contaminated razors and blades. In Cameroon, very limited data are available on the prevalence of HBV among barbers and their clients. The objective of our study was to determine the seroprevalence, the associated risk factors and knowledge of HBV among barbers and their clients.

Methods: A total of 262 participants were recruited in this study. Information on barbers and clients was collected in the salon using a well-structured questionnaire containing sociodemographic characteristics, knowledge of HBV infection, observed shaving practices, characteristics of barbers' salons and potential risk factors of HBV infection. Plasma

component was obtained from 3ml of whole blood sample collected from each of the participants. These samples were all tested for HBsAg using the Rapid Diagnostic Test. All reactive samples were confirmed with an antibody sandwich ELISA technique. Ethical clearance was obtained from the Institutional Ethics Committee for Human Health Research of the Catholic University of Central Africa. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 21. Demographic and other characteristics were compared using Pearson chi-square tests.

Results: Of the 319 participants approached, 262 completed the enrolment process and 33 participants tested positive giving an overall prevalence of 12.6%. An overall seroprevalence of 15.0% and 10.6% was obtained for barbers and their clients respectively. The frequency of HBsAg in yaounde and Douala amongst barbers and clients was; 14.9% and 10.4% and 15.4% and 11.1% respectively.
Among barbers and clients, 17% had not heard of HBV while 36.3% had more than one source of information about HBV. Most of the participants did not know about barbers' shaving instruments, blood transfusion, sexual intercourse, tattooing and mother-to-child as modes of transmission. In this study, there was a significant association between the practice of using sodium hypochlorite solution as an antiseptic for skin cuts and HBV infection status ($p < 0.05$). Those who carried out this practice had twice the chance of being infected by HBV than those who did not (OR = 2.079). There was a significant association between having multiple sex partners and HBV infection ($p = 0.043$).

Conclusion: The seroprevalence of HBV infection is quite high in Yaounde and Douala. There was no association between the modes of transmissions and the HBV status, hence HBV status might be independent of the knowledge regarding modes of transmission and highly dependent on the level of exposure. Proper sterilization of shaving instruments, immunization and education of the general population should constitute an important package in a prevention program.

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Knowledge and Attitude of Non-medical Students Towards Hepatitis B Infection in a Nigerian Tertiary Institution

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Background: Hepatitis B virus is a DNA virus which results in chronic liver infection. The disease is characterised by a spectrum of presentations ranging from asymptomatic incidental findings to features suggestive of liver cirrhosis and cancer of the liver. Most infected individuals are asymptomatic and present at the hospital for treatment at the advanced stage of the disease with an associated high mortality rate. For an infection preventable through vaccination, this scenario could be curbed in our environment. Thus the need for this study was aimed at assessing the knowledge, attitude and vaccination status of final year non-medical students in a Nigerian tertiary institution.

Methods: Our study used a cross-sectional survey with a self-administered structured questionnaire to obtain information from participants. The data collected was coded and analysed using SPSS software version 20.

Results: A total of 160 students out of 166 expected participants took part in the study with a response rate of 96.3%. Majority of participants had knowledge of the infection as 87.5% asserted the fact that it is caused by a virus while only 55.6% agreed that it is associated with liver cancer. There was poor awareness of the transmission route as only 44.4%, 43.8%, and 48.8% of participants acceded that the infection could be spread through sexual intercourse, sharing of sharps and sharing of toothbrushes with an infected person, respectively. Although 91.9% of participants were aware that hepatitis B a be prevented through vaccination of non-infected persons, only 14% had been screened for the virus, of which 8.8% had ever received the vaccine, with only 1.9% completing the vaccination.

Conclusion: Our study shows that further education and awareness of this disease condition, its mode of transmission, prevention and complication amongst students is needed. This will reduce its prevalence and associated complications through early detection achieved via testing for hepatitis B and prompt commencement of treatment.

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FIB-5 Versus FIB-4 Index for Assessment of Hepatic Fibrosis in Chronic Hepatitis B Affected Patients

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Background: & Aim of the study: Chronic hepatitis B virus (HBV) infection is one of the major health problems worldwide. Use of non-invasive tests for assessment of hepatic fibrosis such as the FIB-4 index could be used to avoid liver biopsy. Another promising noninvasive test, FIB-5, could also be used to detect significant hepatic fibrosis. The aim of the study was to compare the use of FIB-5 and FIB-4 as noninvasive markers to assess chronic HBV-related hepatic fibrosis.

Methods: This study was done on 176 chronic HBV patients who underwent liver biopsy. Grading and staging of liver fibrosis was done according to the METAVIR scoring system. FIB-5 and FIB-4 scores were calculated for all patients.

Results: As regards FIB-4 for differentiation between non-significant fibrosis (group I) and significant fibrosis (group II), at a cutoff level of 1.28 with positive predictive value (PPV) 41.4% and specificity 48% while at a cutoff level of 7.08 with PPV 98.8% and specificity 98% for FIB-5.

Conclusion: As regards both scores, the FIB-5 score was more specific than FIB-4 for diagnosing significant from nonsignificant hepatic fibrosis in patients with chronic HBV infection.

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Evaluation of Efficacy and Safety of the Combination of Sofosbuvir and Daclatasvir for the Treatment of Chronic Viral Hepatitis C Patients: A Multicentric Observational Study

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Background: Published data regarding the real-life application of the combination of sofosbuvir/daclatasvir use in Algeria is lacking. Therefore, we conducted an observational study to assess the efficacy and safety of this regimen in Algerian patients with chronic hepatitis C.

Methods: We conducted a multicentric, observational, open-label study to assess the efficacy and safety of a generic fixed-dose combination FDC of sofosbuvir/daclatasvir in patients with chronic hepatitis C (HCV). We included 99 patients with genotypes 1, 2, 3, and 4 for 12 or 24 weeks of treatment without ribavirin. The primary outcome was the proportion of patients with a sustained virologic response 12 weeks after treatment cessation. The secondary outcome assessed the safety and occurrence of adverse events. This study is registered by ClinicalTrials.gov Identifier: NCT05138523.

Results: From 1/11/2019 to 30/11/2020 We included 99 patients with a mean age of 51.4± 14.4 years, 53.5% were female, 19.2% were cirrhotic, 80.8% were non-cirrhotic, 47.47% were genotype 1b, and 17.17% were genotype 2. Efficacy analysis of the intention-to-treat population ITT and per-protocol population PP showed SVR 12 rates of 95.8% and 95.9% respectively. Six adverse events were reported by 3 patients and were minor and manageable.

Conclusion: Based on our results once-daily oral FDC of sofosbuvir/daclatasvir is a safe and effective pan-genotypic treatment for Algerian HCV patients without

ribavirin for 12 or 24 weeks. The promising **Results:** of this study warrant further trials to assess the efficacy and safety of this FDC in treating special populations.

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Nothing About Us Without Us: Community Participation in Developing Long-Acting Hepatitis C Cure

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Background: With 2030 fast approaching and only nine countries on track towards meeting the hepatitis elimination goals, community participation in national hepatitis planning is a crucial part of generating demand for screening, testing, and cure. Community participation throughout all aspects of the research and development process of HCV long-acting medicines helps researchers to better understand patients' and affected communities' values and preferences for different treatment options and methods of drug delivery. The Long-Acting Technologies Community Advisory Board (LAT CAB) is the first global advocacy platform focused on learning and translating science into action, strengthening technical knowledge about long-acting medicines, and exchanging lessons on treatment access strategies across the world.

Methods: The LAT CAB is comprised of 12 treatment advocates, people with lived experience, and representatives with extensive civil society and health policy networks. It meets monthly with scientists and other global health stakeholders and monitors the development of a long-acting version of the HCV cure. The LAT CAB reviews the latest developments on long-acting medicines under the Unitaid-funded LONGEVITY project, in addition to learning from other fields to inform their technical capacity. MapCrowd, a community-driven, online, crowdsourced database, is a strategic tool to support the LAT CAB's community engagement efforts and helps global advocates understand the availability and access issues of HCV active pharmaceutical ingredients (APIs) under investigation for long-acting formulations. MapCrowd allows users to compare pricing of oral direct-acting antivirals (DAAs) across our scope of 119 countries and can inform pricing negotiations when long-acting versions prove safe and effective. The mapCrowd platform provides free access to national, regional, and international data on HCV, allowing users to create maps, graphs, and tables, and download data for national and regional campaigns.

Results: Crowd-sourced data on availability, access, and pricing shows the importance of registering generic versions of oral DAAs to facilitate access and uptake of a potential long-acting version. The LAT CAB provides a community-led advocacy platform to guide strategic advocacy at the country-level to prepare the ground for a long-acting HCV cure. This community-led monitoring approach gathers information and observations regarding HCV testing and treatment from and about key populations and other under-served groups. Mapping the registration of the HCV cure resulted in the launch of the #WorthTheCure campaign, an interactive design tool, and collaborative learning modules that amplify treatment access demands and provide resources for advocates to overcome treatment restrictions, administrative, and regulatory treatment barriers.

Conclusion: To ensure that community voices are heard, and their concerns are taken into account, creative, well-resourced, and community-led platforms like the LAT CAB and mapCrowd provide replicable and scalable approaches for active participation in national hepatitis C planning processes, engagement with researchers, and strategic exchange of treatment access-related information. Communities must actively engage with global HCV community platforms to learn from fellow advocates, participate in knowledge exchange, and provide up-to-date information on HCV diagnostics and treatment to sustain global HCV efforts.

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The Performance of the Xpert Hepatitis C Fingerstick Viral Load Assay as a Point-Of-Care (POC) Test

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Background: We need to progress on viral hepatitis testing and treatment, if we are to meet the 2030 goals for viral hepatitis elimination. Screening for HCV antibodies (anti-HCV) by the enzyme immunoassay (EIA) has been the initial test for hepatitis C diagnosis. However, antibody tests cannot distinguish between resolved and active infection and expensive tests with specialized equipment became a necessity to confirm an antibody test by PCR or viral load (VL). To improve diagnostics, alternative sampling and convenient testing platforms are required. We evaluated the performance of the GeneXpert fingerstick (FS) VL assay on fingerstick capillary blood, by comparing it to a laboratory reference viral load assay on plasma.

Methods: Patients were invited to participate in the study at the gastroenterology clinic, Charlotte Maxeke Johannesburg Academic Hospital (CMJAH), regardless of anti-HCV positivity. Capillary blood (100µl) was collected at the clinic, using the EDTA-coated minivette 100 (Sarstedt Ag and Co, Numbrecht, Germany), which were placed directly on the assay cassette in the GeneXpert, following the manufacturer's instructions (Cepheid International, Sunnyvale, CA, USA). EDTA blood were collected from each patient by venipuncture and sent to the laboratory for centrifuging and testing of plasma. Plasma volume of 650µl was tested by the reference test, COBAS Ampliprep/COBAS TaqMan VL assay (CAP/CTM HCV, Roche Molecular Systems, Pleasanton, California, USA). All analyses were performed in log10 - transformed values IU/ml. Performance was measured by concordance, accuracy, sensitivity, specificity and agreement by a Bland-Altman analysis.

Results: A total of 62 results were compared on the HCV GX FS VL and the CAP/CTM HCV VL. Concordance between the two assays was seen in 58/62 samples (94%). The diagnostic sensitivity of the assay was 89% (95%CI 65.3% - 98.6%) and the specificity was 100% (95%CI 91.6% - 100.0). The positive and negative predictive values were 100% and 96%, respectively and Cohen's kappa was 0.85. A high Pearson correlation (r=0.82) and linear regression coefficient of R2 =0.66 were shown. The Bland-Altman plot showed a mean difference or bias between the two platforms (CAP/CTM HCV - HCV GX FS VL) of 0.03 log10 IU/ml ± 0.45 with 95%CI [-0.21; 0.27 log10 IU/ml]. This means that the HCV GX FS VL assay read 0.03 log10 IU/ml less than the CAP/CTM HCV VL assay. The upper level of agreement was 0.92 [-0.02; 1.84] and lower level of agreement at -0.85 [-1.78; -0.08].

Conclusion: The different limit of detection (LODs) of the two assays (<15 IU/ml for CAP/CTM HCV viral load and <100 IU/ml for HCV GX FS VL, respectively) may have accounted for the low sensitivity of the HCV GX FS VL assay. The bias and levels of agreement were accepted as this do not affect clinical monitoring thresholds. The HCV GX FS VL assay compared well with the CAP/CTM HCV VL and is recommended for use as a diagnostic test for HCV viral load on capillary blood samples at clinic point-of-care level.

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Hepatitis B Serostatus and Vaccine Uptake and Efficacy Among Health Workers in Zambia

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Background: Heathcare workers (HCW) are central to scaling-up hepatitis elimination activities in sub-Saharan Africa (sSA). While effective hepatitis B vaccines exist, provision to HCW is far from universal in sSA, including in Zambia. Where the vaccine is available, barriers to its implementation are not well described. Most published data on hepatitis B vaccine efficacy were derived in low prevalence and non-African populations. In Zambia, we piloted an HBV vaccination program for HCW and described baseline serological markers, uptake and completion of the vaccine series, and vaccine efficacy.

Methods: In Kalulushi district, Copperbelt Province, we enumerated all HCW, which we defined as a person

currently employed at a public or private health facility or enrolled in health professional school (nursing, laboratory). At all health facilities and professional schools, we sensitized leadership and gave a half day training on viral hepatitis. Then all HCW were invited to participate in the vaccination program. Before vaccination, we collected blood to measure hepatitis B surface antigen (HBsAg), surface antibody (anti-HBs), and core antibody (anti-HBc) at a central laboratory. HCW were given test results and those who were HBsAg-negative and non-immune (anti-HBs <10 IU/ml) were offered 3 doses of GeneVac-B (Serum Institute of India) at 0, 1, and 6 months. At least 1 month after each vaccine dose we re-assessed anti-HBs levels. We described the proportions of HCW at enrollment who had active infection (HBsAg-positive), immunity from prior vaccination (HBsAg-negative, anti-HBc-negative, anti-HBs >=10 IU/ml), resolved infection (HBsAg-negative, anti-HBc-positive, anti-HBs >=10 IU/ml), isolated core-positivity (HBsAg-negative, anti-HBc-positive, anti-HBs <10 IU/ml), and were HBV naïve (all markers negative). We described completion of the vaccine series. In HCW who were HBV naïve or had isolated core-positivity, we described vaccine efficacy, defined as achieving anti-HBs >=10 IU/ml.

Results: Among 638 HCW (median age 28 years; 72.4% women, 7.2% HIV-positive) who enrolled, 31 (4.9%) had active infection, 110 (17.2%) had prior vaccination, 19 (3.0%) had resolved infection, 396 (62.1%) had isolated core positivity, and 82 (12.9%) were HBV naïve. Among 478 deemed eligible, 241 (50.4%) completed all 3 vaccine doses. Low vaccine series completion was attributed to migration, issues with coordination, and hesitancy. In HBV-naïve individuals, immunity developed in 17.6%, 79.4%, and 100% with 1, 2, or 3 doses respectively. In those with isolated core positivity, immunity developed in 31.7%, 93.7% and 99.0% with 1, 2, and 3 doses respectively. HIV status was not associated with enrollment HBV serostatus or vaccine efficacy.

Conclusion: As only 1 in 8 HCW were HBV-naïve, testing before immunization of this group may be a more efficient strategy than blind immunization. Strategies to improve completion of the 3-dose series are needed. Isolated core positivity was more common than previously reported, and many of those with isolated core positivity did not experience the expected anamnestic response after the first vaccine dose. Better understanding is needed of isolated core positivity and its implications in sSA.

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Assessment of Hepatitis B Birth Dose Vaccination Among Newborns in Nigeria

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Background: Globally, Nigeria has the largest number of children infected with hepatitis B virus (HBV). However, hepatitis B vaccine birth dose (HepB-BD) and three-dose (HepB3) coverage remain low (52% and 57%, respectively). Timely (within 24 hours) HepB-BD vaccination is key to preventing mother-to-child transmission, as 70%–90% of children infected at birth progress to chronic HBV infection. To advance HBV elimination in Nigeria, we conducted a baseline evaluation to assess vaccination policy and identify barriers/facilitators for implementing timely HepB-BD administration and to inform the design and implementation of interventions to improve timely HepB-BD coverage.

Methods: We selected four local government areas in Adamawa and Enugu states, representing northern and southern regions in Nigeria. We assessed 40 facilities per state. Health facility selection was based on cold chain functionality, vaccine availability, and communities with a mix of health facility and home births. We assessed health facilities using an adapted WHO health-facility HepB-BD supervisory checklist and evaluated knowledge, attitudes, and practices of HepB-BD vaccination among healthcare workers (HCWs). We conducted qualitative interviews with delivery ward and routine immunization staff and with pregnant women attending antenatal care to understand challenges of HepB-BD administration and uptake.

Results: Overall, 95% of facilities in Adamawa and 70% in Enugu reported having policy documents stating HepB-BD vaccination should be administered within 24 hours and up to two weeks after birth. HepB-BD was reported to be stored close to the administration location in 85% of facilities in Adamawa and 97.5% in

Enugu. In both states, HepB-BD administration was mainly assigned to routine immunization staff; <30% of facilities assigned the responsibility to midwives. Contraindications to HepB-BD vaccination were reported by 42.5% of facilities in Adamawa and 50% in Enugu. Data recording forms were reported to include separate columns to record timely and untimely HepB-BD in 77.5% of facilities in Adamawa and 40% in Enugu. Knowledge that chronic HBV infection can cause liver cirrhosis, cancer, and premature death was reported by 42% of HCWs in Adamawa and 46% in Enugu. Knowledge that HBV can be transmitted from mother to child at birth was reported by 83% of HCWs in Adamawa and 91% in Enugu. Knowledge that giving HepB-BD within 24 hours can prevent HBV transmission was reported by 96% of HCWs in Adamawa and 97% in Enugu. Practice of refusing to give HepB-BD to a baby was reported by 4% of HCWs in Adamawa and 13% in Enugu. Most HCWs were willing to vaccinate their children against HBV. Qualitative interviews among HCWs revealed themes related to needs for expanded sensitization and awareness, staffing shortages, and concerns regarding vaccine wastage. Among pregnant women, themes included lack of HepB-BD access and knowledge on importance of timely HepB-BD.

Conclusion: Key barriers to timely HepB-BD uptake included lack of policies emphasizing the importance of timely HepB-BD, false contraindications, inadequate data recording, and poor healthcare and community knowledge of the importance of timely HepB-BD. Integrating timely HepB-BD administration into essential newborn care and increasing HCW and community awareness of the importance of timely HepB-BD is needed.

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Introducing Hepatitis B Birth Dose Vaccination in Africa: A Toolkit for National Immunization Technical Advisory Groups

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Background: In Africa, despite a high HBV burden, only 14 of 47 (30%) countries have introduced the hepatitis B birth dose vaccine (HepB-BD) by 2021 and in 2020, only 6% of newborns received HepB-BD vaccine. National Immunization Technical Advisory Groups (NITAGs) provide independent, evidence-informed advice to guide development of recommendations of HepB-BD vaccination by ministries of health and other health authorities. To assist NITAGs, the Coalition for Global Hepatitis Elimination (CGHE) in collaboration with U.S. Centers for Disease Control and Prevention (CDC) and WHO Africa Regional Office (AFRO), developed a toolkit that compiles key evidence to inform NITAG analyses and recommendations for HepB-BD vaccination.
Methods: Beginning in March 2021, CGHE (with funding support from CDC) held consultative meetings with NITAG technical experts from the Task Force for Global Health (TFGH), WHO and CDC to identify gaps in evidence needed by NITAGs to develop recommendations. In addition, CGHE also convened a community of practice representing 35 African countries to gather perspective on what is needed for a NITAG toolkit. Evidence was gathered from peer-reviewed literature, CDC and WHO publications, and other well-validated global estimates including the Institute for Health Metrics and Evaluation and Global Cancer Observatory. Drafts of the toolkit were shared with persons experienced in in the NITAG process in African countries.

Results: The toolkit provides information about HepB-BD vaccination covering five key areas: 1) the specifics of hepatitis B virus, modes of HBV transmission among children and natural history of infection; 2) the global and regional burden of HBV infection and associated complications; 3) hepatitis B vaccine immunogenicity, effectiveness, vaccine characteristics, safety and vaccine administration; 4) global targets for HBV mother-to-child elimination and policies for HepB-BD vaccination and 5) public health impact of HepB-BD background cost-effectiveness, acceptability and other considerations for implementing HepB-BD vaccination in Africa. Synthesized information is presented in easy to read language, highlighting key points in textboxes and summarizing important data in tables and figures that can be readily exported for use in materials prepared by NITAGs. The toolkit will be available in French and English versions.

Conclusion: The HepB-BD toolkit provides a common resource of essential information to support recommendations by NITAGs in Africa regarding the background of HepB-BD vaccine. In collaboration with

CDC and WHO, CGHE is disseminating the toolkit to NITAGs in Africa. The HepB-BD NITAG tool kit will be available at www.globalhep.org

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Mobilizing Civil Society Organizations (CSOs) To Promote the Benefits of Hepatitis B Birth Dose Vaccine for Their Communities

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Background: One in four newborns infected with HBV dies prematurely from liver disease and cancer in Africa. A timely birth dose of hepatitis B vaccine (HepB-BD) given to newborns can prevent most of these infections, related complications and deaths. In 2020, only 6% of newborns in Africa received a timely HepB-BD vaccine. One major barrier to HepB-BD background in Africa is the lack of knowledge and awareness of the importance of HepB-BD vaccination. This abstract describes a novel program to support and amplify the efforts of CSOs across sub-Saharan Africa in raising awareness of the importance of HepB-BD vaccination for their communities.

Methods: From December 8, 2021–February 1, 2022, CGHE (with funding support from the CDC) put out a request for funding applications (RFA) to national and regional CSOs in Africa. The aim of the RFA is to support CSOs to develop and implement novel approaches to raise awareness of the importance of HepB-BD vaccination and catalyze the vaccine background process. The target groups for this awareness campaign include 1) community leaders and policy-makers, 2) community, specifically women of reproductive age and 3) healthcare providers. Preference was given to CSOs with experience in health promotions for infant immunization and maternal child health in African countries that have not introduced the HepB-BD vaccine.

Results: CGHE received 31 applications from CSOs representing 11 African countries. From these applications, seven CSOs were selected for grant funding and technical assistance according to the RFA criteria. These CSOs included: Care for Social Welfare International (Cameroon); Hepatitis Alliance of Ghana (Ghana); Health and Rights Education Programme (Malawi); Hepatitis Aid Organization, Africa Hepatitis Initiative and Great Lakes Peace Center (Uganda); and Foundation for Liver and Gastrointestinal Research (Tanzania). Two CSOs were funded independently of CDC resources. Of the seven CSOs, 6 planned to hold high level meetings with policy makers, five planned healthcare provider sensitization workshops, four planned to hold community sensitization workshops, three planned to develop posters, two planned to develop radio shows and jingles, and one each planned for documentary production, animation film development, social media messaging, newspaper article and mobile phone application, all these activities aimed at sensitizing targeted communities on the importance of HepB-BD vaccination. The CSOs have initiated projects to develop infographics and audio/visual recordings with key messages to increase HepB-BD awareness and knowledge using local language(s) as appropriate. They have also begun developing media campaigns and are planning high-level meeting with Ministry of Health officials and other policy makers to secure support for background and/or scale-up of HepB-BD.

Conclusion: CSOs play a fundamental role in policy development and health care delivery. The planned activities by the CSOs highlight the diversity of communication approaches available to reach key targeted audiences to advocate for HepB-BD background in African countries. Materials developed through this engagement will be available for adaption by other countries for HepB-BD background advocacy.

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Coverage of Timely Hepatitis B Birth Dose Vaccination in Urban Gambia: 2019 to 2020

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Background: Timely hepatitis B birth dose vaccine, administered within the first 24 hours after birth, will prevent most perinatally acquired infections and offers early protection from horizontal transmission. Despite significant improvements in maternal and neonatal health in Africa, including increased health facility deliveries, timely administration of the hepatitis B birth dose vaccine remains poor in the region. This study assessed the proportion of babies born in urban Gambia in 2019 and 2020 who received a timely hepatitis B birth dose vaccine.

Methods: In this cross-sectional study, we assessed birth dose vaccination data from infant welfare cards of babies born between 1st January 2019 to 31st December 2020 and attending infant welfare clinics at the three largest health facilities in the Greater Banjul Area: Edward Francis Small Teaching Hospital (EFSTH), Serekunda Health Center (SKHC) and Bundung Maternal & Child Health Hospital (BMCHH). We also interviewed mothers to collect socio-demographic data and assess knowledge on hepatitis B prevention.

Results: 254 babies were enrolled in this study. Of these, 80% (203/254) were born in 2020 and 20% (51/254) in 2019. Out of 254 babies, 79 (31.1%) babies received timely hepatitis B birth dose vaccine within the first 24 hours. Being born on a weekday (36.0%, p=0.038) or attending either BMCHH or SKHC (45.6%, p=0.005) were associated with higher birth dose vaccine coverage. Babies born in 2020 were more likely to receive a hepatitis B birth dose vaccine (63/180, 35%) compared to babies born in 2019 (11/51, 21.6%). The uptake of the second and third dose was high with more than 75% of babies having received the two doses.
Knowledge about Hepatitis B vaccination was poor among mothers with 85.8% not knowing that babies required a hepatitis B vaccine at birth and only 14.2% had knowledge about hepatitis B vaccine.

Conclusion: These results suggest that huge gaps remain in the implementation of universal hepatitis B birth dose vaccination in The Gambia. Strategies should be implemented to scale up the hepatitis B birth dose in line with current WHO recommendations and strategies.

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Where Does Ethiopia Stand on the Journey to Eliminate Hepatitis B and C? An Assessment of the National Hepatitis Elimination Profile for Ethiopia

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Background: and Aims: The time to achieve the 2030 WHO goals for hepatitis elimination is less than a decade away. In 2022, WHO released a new global strategy, and member states are encouraged to develop new national strategies to achieve the global goals. To assist planning, a National Hepatitis Elimination Profile (N-HEP) was developed for Ethiopia to assess the status of national HBV and HCV program implementation.

Methods: Together with local partners, a N-HEP was prepared for Ethiopia using a standard data collection template utilized for 15 other countries. Data were collected from focal persons at the Federal Ministry of health (MOH), government reports, expert clinicians, and peer-reviewed articles. It summarizes essential components of effective elimination programs, national planning and key policies, coverage of key interventions, and progress towards WHO 2020 interim goals and targets. The N-HEP also presents achievements, challenges, innovations, and next steps. All data was validated by local partners.

Results: Ethiopia has HBV and HCV elimination goals for 2030 and updated the national elimination strategy in 2022. Modeled estimates suggest the WHO 2020 targets for mortality reduction have not been met. No data on incidence is available. Strategic information systems for measuring hepatitis mortality and incidence are weak. Of key interventions, HepB 3 dose vaccine is at 96%, although there may be inequities. Hepatitis B birth dose (BD) was approved in 2020, but has not been rolled out. A BD pilot and study to assess scale-up feasibility and efficacy are underway. In 2019,

the prevalence of HBsAg in children <5 years was 1.3%, higher than the WHO target of 1%. National treatment guidelines have been established, but access to diagnosis and treatment remain limited. The diagnosis of viral load is not widely available and costs > 100 USD or more per test to be sent abroad. Despite the drugs being included in the Essential National Drug List, patients are required to pay out-of-pocket for testing and treatment, and the cost of DAA is still 1,000 USD for a three-month dosage. Challenges to decentralization include availability of trained health professionals and a system for integrated hepatitis clinic across facilities. As a result, in 2021, less than 1% of persons living with HBV were diagnosed and less than 1% of those diagnosed were receiving appropriate treatment. For HCV, less than 5% of persons were diagnosed. Key recommendations included in the N-HEP are scaling up HepB-BD; strategies to expand screening and linkage to care; innovating decentralization approaches; increasing POC diagnostic testing; reducing costs for testing and treatment; and mobilizing new domestic and external investments.

Conclusion: N-HEPs reveal important gaps and innovative solutions that can benefit low- and middle-income countries in hepatitis elimination national planning. It will assist providers, policy makers and advocates where Ethiopia stands on the road to elimination, support prioritization of activities and resources. Strategies for accelerating access to HBV and HCV testing and treatment, and decentralization must be implemented. The N-HEP can help monitor progress and compare to regional and global peer countries.

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Current Situation, Major Challenges and Future Prospective in Term of Viral Hepatitis in Sudan

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Background: Viral Hepatitis is a worldwide health problem particularly hepatitis B, with an estimate more than 257 million people chronically hepatitis B surface antigen (HBsAg) Positive.
According to the most recent estimates of the global burden disease study and WHO ,viral hepatitis responsible for approximately 1.34 million death annually, which is similar to annual number of death from HIV/ADIS(1.3 Million),malaria(0.9 million),and tuberculosis (1.3million). In may 2016 ,WHO adopted a global hepatitis strategy with the goal of eliminating viral hepatitis as public health threat by 2030,many countries in sub-Saharan Africa are now developed or in the process of developing viral hepatitis management guidelines and strategic plans to achieve these goals for viral hepatitis elimination . According to estimates of EMRO Sudan is classified as a high endemicity country for HBV (> 8% HBsAg seroprevalence in the general population > 5 years)

Methods: By a nomination of national consultant in the mid of 2018, Extensive literature and desk reviews were conducted and series of meetings workshops with adequate participation of partners and stockholders potentially related to control of viral hepatitis in the country SWOT analysis used to identify strengthens weaknesses, opportunities and threats.

Results: After active discussion and contributions, Strategy vision, goal, objectives and guiding principles of national strategic formulated in line with global strategic plans to eliminating viral hepatitis by 2030, composed of nine strategic objectives: An integrated, coordinated and capacitated viral hepatitis control response is established under leadership of FMOH and in collaboration with partners. The national health information system is reoriented to monitor viral hepatitis burden and service coverage indicators. Ensure protection of children under the age of five years, health care workers, target adolescents and young adults against HBV infection through HBV vaccination. Ensure safety of injections and surgical procedures in health facilities according to national guidelines. 100% of transfusions with whole blood or blood products are done using screened blood. Ensure treatment of pregnant women with chronic HBV infections with recommended antiviral drugs. Increase adoption of safer sex practices for prevention of viral hepatitis among female sex workers and men who have sex with men. Ensure early detection of viral hepatitis B & C cases. Treat eligible cases of chronic viral hepatitis according to national treatment guidelines to achieve viral suppression of HBV cases or cure of HCV cases.

Conclusion: It is necessary to have strategic plan in place to control viral hepatitis, challenges of implementation and M&E measurable indicators still and sustainability remaining.

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Risk of Hepatocellular Carcinoma Among First Degree Relatives of Primary Liver Cell Carcinoma Patients at the Jos University Teaching Hospital, Jos, North-Central, Nigeria.

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Background: First degree relatives of liver cancer patients are at risk of developing hepatocellular cancer (HCC); this risk is further increased by the presence of other risk factors such as alcohol ingestion, hepatitis B and C virus infections. The increase risk is as a result of shared genetic makeup and the clustering of hepatitis viral infection in families. Late presentation with HCC is a leading cause of high fatality associated with HCC; thus, early Identification of risk factors in first degree relatives and linkage to care is an attractive intervention that can decrease progression to HCC. Objective: To identify risk factors for HCC in first degree relatives of HCC patients and linking them to care.

Methods: This is an ongoing hospital based cross sectional study, where first degree relatives of HCC patients by the bedside are identified and screened for hepatitis B and C using rapid test and those positive are given a clinic appointment and those negative referred for hepatitis B vaccination. While, those who use alcohol are counselled on cessation.

Results: A total of 68 patient's relative have been recruited so far. The mean age was 38 (+12) years, with a range of 15 to 69 years. Thirty seven (54.4%) were females, while thirty one (44.4%) were males. Eight subjects (11.8%) tested positive for HBsAg and six (8.8%) were positive for HCV antibody, while none was positive for both HBsAg and HCV antibody. One (1.5%) subject takes alcohol and none of the subjects were aware that they are at risk of developing HCC based on their relationship with a liver cancer patient.

Conclusion: Despite the risk of HCC in first degree relatives of liver cancer patients, there is poor awareness of such risk among those relatives. There is need to prioritize screening for hepatitis B and C virus infections and health education among first degree relatives of HCC patients.

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Liver Transplant for Hepatocellular Carcinoma: Experience in a Algeria

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Background: In Europe and the USA, HCC represents 20% of HT indications. Liver transplant (LT) has become the treatment of choice in patients with hepatocellular carcinoma (HCC) and cirrhosis. Objective: We aimed to study the clinical characteristics and evolutionary of liver transplant for HCC

Methods: The indication for the LT was according to the Milan criteria. Prospective follow-up of transplanted patients on clinical, biological and morphological data (histology, imaging). The search for recurrence is based on quarterly ultrasound data, with TAP CT at 6 and 12 months in the first year. The dosage of alpha foeto protein was biannual.

Results: Between February 2003 to June 2022 , out of 96 LT, 8 patients were translated for HCC . Of these 8 patients: 5 had living donor related liver transplantation and 3 deceased liver transplantation. The median follow up time after LT was 52 months [14-116] . The median age patients was 53 years [range 11–66 years] , with sex ratio M/F : 0.85. The

cirrhosis was related to a viral infection in 4 patients (HCV=3, HBV = 1) , with the Child Pugh score was: A(n=3), B (n=2) and C (n=3). The average number of HCC nodules was 1.63 [1–3], the average size 29 mm [10–48]. All patients had a typical radiological semiology of HCC and 2 patients had a "salvage" transplant. Histopathology revealed incidental cholangiocarcinoma in 3 (42.8 %) , and the tumor was well differentiated in 75 % (n=6).To date, there has been no recurrence, one patient died of hepatic artery thrombosis at M 5.HCV patients (n=3) were treated with generic free IFNs and are in SVR.
Conclusion: In our experience, liver transplant for hepatocellular carcinoma showed good long-term outcomes.

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EFFICACITÉ ET TOLÉRANCE DES DIURÉTIQUES AU COURS DE LA CIRRHOSE

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Background: La décompensation oedemato-ascitique marque un tournant évolutif sévère dans l'histoire naturelle de la cirrhose. Le traitement symptomatique repose principalement sur les diurétiques épargneurs de potassium associé ou non à un diurétique de l'anse. Le but de notre étude était d'évaluer l'efficacité et la tolérance des diurétiques chez les patients cirrhotiques et de dégager les facteurs prédictifs d'intolérance et de résistance aux diurétiques chez ces patients afin d'optimiser les modalités thérapeutiques et de surveillance.

Méthodes: Nous avons mené une étude rétrospective, monocentrique et longitudinale, colligeant les patients traités par diurétiques pour une première décompensation entre janvier 2016 et décembre 2018. Les molécules utilisées étaient les anti aldostérone à la dose minimale de 100 mg/j seuls ou en association à un diurétique de l'anse à la dose minimale de 40 mg/j. Les patients ont été suivis et évalués à court terme (pendant le séjour hospitalier) et à long terme (suivi minimal en consultation externe de 6 mois). Les complications recherchées sous diurétiques étaient : L'encéphalopathie hépatique,des vertiges, une insuffisance rénale aigue (créatinine sérique supérieure à la valeur seuil de notre laboratoire :115 µmol/L), une hyponatrémie (natrémie <130 mmol/L), et une hypo ou une hyperkaliémie (kaliémie <3 mmol/L ou >6 mmol/L).

Résultats: Cinquante-neuf patients ont été inclus avec un sex-ratio H/F de 0,33 avec une nette prédominance féminine et un âge moyen de 67 ans. Dans notre série, l'étiologie virale était prédominante, retrouvée dans 61% des cas. La cirrhose était classée Child B dans plus de la moitié des cas (55%). Le syndrome oedemato-ascitique était le mode de décompensation le plus fréquent (85%). Une monothérapie a été préconisée chez 38 patients (64%) et une bithérapie chez 21 patients (36%).Dans les suites du traitement diurétique, vingt-sept patients (46%) avaient présenté une complication. Ces complications étaient dominées par l'hyponatrémie qui a été notée chez 23 patients (39%). Un seul patient avait développé une hypokaliémie et aucun patient n'avait développé d'hyperkaliémie ni d'insuffisance rénale.
L'encéphalopathie hépatique a été objectivée chez 2 patients et des vertiges chez un autre patient.
Quarante-neuf patients ont été mis sortants sous traitement diurétique au long cours. Vingt patients (43%) avaient présenté une complication. Une hyponatrémie a été notée chez 7 patients (15%), une hyperkaliémie a été notée chez 6 patients (13%) et une insuffisance rénale a été notée chez 4 patients (9%). Une encéphalopathie hépatique avait fait suite à la prise des diurétiques au long court chez 6 patients (13%).
L'étude analytique a conclu que l'antécédent d'hypertension artérielle, le traitement combiné et les petites varices œsophagiennes étaient des facteurs prédictifs de bonne tolérance à court terme avec p=0,004, 0,01 et 0,05 respectivement. La survenue d'une complication infectieuse concomitante à la décompensation était un facteur prédictif de mauvaise tolérance à moyen terme (p=0,049). Le traitement combiné était associé à l'efficacité du traitement (p<0,001).

Conclusion: La tolérance et l'efficacité du traitement diurétique étaient associées au traitement combiné. Une étude prospective randomisée avec un large effectif permettrait d'indiquer ce traitement dans la prise en charge des décompensations au cours de la cirrhose.

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Profil épidémiologique et caractérisation moléculaire du virus de l'hépatite C chez les donneurs de sang à Lubumbashi, République Démocratique du Congo

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Contexte: L'hépatite C est une maladie relativement fréquente dans le monde. On estime environ 130 à 210000000 d'individus, soit 3% de la population mondiale, ont une infection chronique par le virus de l'hépatite C et que 3 à 4 millions de personnes sont nouvellement infectées chaque année. La République Démocratique du Congo étant dans la zone de forte endémicité, n'est pas épargnée des fléaux causés par ce virus. La distribution des génotypes du virus de l'hépatite C(VHC) varie considérablement dans le monde. La diversité génomique entre les génotypes a des implications pour le traitement, le développement des vaccins et la conception optimale des tests de diagnostic du VHC.

Méthodes: Il s'agit d'une étude descriptive transversale chez des donneurs de sang durant la période de novembre 2017 à décembre 2019. La détection des anticorps anti-VHC a été réalisée par test de diagnostic rapide (One Step Hepatitis C Virus Test Strip) puis confirmée par le Liaison®XL Quant Ab HCV. La qPCR a été réalisée sur le système Panther et le génotypage sur le système Sentosa.

Résultats: La séroprévalence était de 4,8%. Les génotypes 4 (90,9%) et 7 (9,1%) et certaines mutations de résistance aux médicaments ont été identifiés dans la population étudiée. Des perturbations significatives du cholestérol HDL, de la bilirubine directe, des transaminases (ASAT et ALAT), de la PAL, de la GGT et de l'albumine ont été observées chez des donneurs de sang positifs pour l'Anti-VHC. Certains facteurs de risque tels que les dons familiaux et les donneurs de sang bénévoles irréguliers associés à l'hépatite C ont été déterminés.

Conclusion: Les résultats ont montré que Lubumbashi se trouve dans une région à endémicité considérable pour le VHC et rapportent pour la première fois des souches de VHC de génotypes 4 et 7. Pour une bonne sécurité transfusionnelle, un accent particulier doit être mis dans la sélection pré-don de candidats donneurs de sang au don de sang et dans la sélection des tests de dépistage spécifiques pour les marqueurs viraux du virus de l'hépatite C.
Keywords: séroprévalence, génotypes, VHC, résistance, donneurs de sang, RDC.

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Les atteintes hépatiques au cours de la maladie de la Dengue

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Répandue dans toutes les zones tropicales et subtropicales du monde, la dengue est le premier problème de santé publique posé par les arboviroses. Au Burkina Faso il a été notifié une flambée de dengue sérotype DENV-2 [1], incriminé dans les formes sévères de Dengue. Les complications les plus courantes sont d'ordres hépatiques et neurologiques susceptibles d'entrainer une aplasie médullaire. Dans cette étude, nous aborderons les atteintes hépatiques au cours de cette affection.

Le but de ce travail était de décrire les aspects sociodémographiques, diagnostiques, thérapeutiques et évolutifs des patients atteints de dengue avec cytolyse hépatique.

Méthodes: Il s'est agi d'une étude prospective de type transversal portant sur la maladie de la dengue dans 2 structures de la ville de Ouagadougou. L'étude s'est étalée sur une période de 3 mois d'Aout à novembre 2019.La population de l'étude a été constituée par l'ensemble des patients hospitalisés chez qui le diagnostic de maladie de Dengue a été retenu durant

la période de l'étude et présentant par ailleurs des signes hépatiques.

Résultats: Durant notre période d'étude nous avons recruté 134 patients atteints de dengue dont 93 soit 69,4% avaient au moins une transaminase élevée. Le sex ratio était de 1,90 et la moyenne d'âge était de 35 ans. Les symptômes d'atteinte hépatique étaient rares avec la douleur de l'hypochondre droit dans 4,30% des cas et l'ictère dans 1,07% des cas. La dengue hémorragique a été retrouvée chez 5 patients. Les IgG étaient négatifs dans 77,42 %. La cytolyse hépatique prédominait sur les ASAT avec 91,39% des patients concernés contre 82,79% qui avaient des ALAT élevées. La majorité des patients (44 soit 47,31%) avait au moins une valeur des transaminases était élevée jusqu'à 3 LSN ; et une minorité ,14 patients soit 15,06% avait des transaminases supérieure à 10 LSN. Une faible proportion de patients avaient une insuffisance hépatocellulaire 26,92 % avec un taux de prothrombine abaissé. Plus de la moitié des patients (57,14 %) avait une durée de séjour inférieure ou égale à 3 jours.
L'antalgique de palier 1 (le paracétamol) était le plus administré (86,36 %) dans les trois groupes de cytolyse. L'évolution a été favorable dans 91,40%. L'hémorragie digestive haute était la cause la plus fréquente des décès dans 80%.

Conclusion: le virus de la dengue provoque des altérations du parenchyme hépatique. Les degrés d'atteinte hépatique sont variables. La symptomatologie clinique étant quasi-inexistante, la mesure des transaminases reste importante.

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Evaluation of the Analytical Performance of Six Rapid Diagnostic Tests for the Detection of Viral Hepatitis B and C in Lubumbashi, Democratic Republic of Congo

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Rapid diagnostic tests (RDTs) are widely used in Lubumbashi for the diagnosis of viral hepatitis B and C. To date, there are no works that have been carried out in Lubumbashi to independently assess the performance of such tests. This study aimed at assessing the effectiveness of RDTs for the detection of HBsAg and anti-HCV antibodies among blood donors in Lubumbashi. A total of 300 serum samples (100 HBsAg positive samples; 100 anti-HCV positive samples and 100 HBsAg and anti-HCV negative samples) were tested simultaneously using the 6 locally used RDTs and as gold standard the chemiluminescent assays for HBsAg and the RT-PCR for HCV.detection.

The six evaluated RDTs demonstrated a sensitivity and a negative predictive value (NPV) of 100% whereas the specificity and positive predictive value (PPV) varied from 46% to 98.1%. SB BioLine HBsAg test performed best in this study with 100% of sensitivity, 97.1% of specificity,100% of NPV and 96.9% of PPV.

Furthermore, sensitivity, specificity, NPV and PPV for SB BioLine HCV test were as follows: 100%, 98,1%, 100% and 93.9%. Therefore, SD BioLine tests (HBsAg, HCV) would be selected as the first line RDTs for the detection and the diagnostic of hepatitis B and C. They can prevent blood-borne transmission of HBV and HCV in areas with limited incomes as Lubumbashi.

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Aspects épidémiologiques et caractérisation moléculaire du virus de l'hépatite B chez les donneurs de sang à Lubumbashi, République Démocratique du Congo

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Contexte: Le virus de l'hépatite B (VHB) constitue une menace importante pour la sécurité des transfusions sanguines en Afrique subsaharienne. Les souches de VHB circulant parmi les donneurs de sang à Lubumbashi, République démocratique du Congo

(RDC) ne sont pas encore caractérisées. Le but de cette étude était de déterminer la séroprévalence, les facteurs de risque, les modifications des paramètres biochimiques au cours de l'infection par le VHB et la caractérisation moléculaire du VHB chez les donneurs de sang à Lubumbashi.

Méthodes: Il s'agissait d'une étude transversale descriptive chez des donneurs de sang durant la période de novembre 2017 à décembre 2019. La détection de l'HBsAg a été réalisée par test de diagnostic rapide (One Step Hepatitis B surface Antigen Test® Strip) puis confirmée par le Liaison XL® Technique quantitative HBsAg. La PCR ciblant le gène P a été réalisée sur LightCycler® 96 et le génotypage par la technique de séquençage sur ABI 3500.

Résultats: La séroprévalence était de 7,9 %. La charge virale moyenne était d'environ 4,6 ± 3,3 Log10 UI/mL. Les génotypes E (53,1 %), A (41,8 %), A3/E (3,8 %), A1/E (1,3 %) et certaines mutations de résistance aux médicaments ont été identifiés dans la population étudiée. Des perturbations significatives du cholestérol HDL, de la bilirubine directe, des transaminases (ASAT et ALAT), de la PAL, de la GGT et de l'albumine ont été observées chez des donneurs de sang positifs pour l'AgHBs. Certains facteurs de risque tels que les dons familiaux et les donneurs de sang bénévoles irréguliers associés à l'hépatite B chronique ont été déterminés.

Conclusion: Les résultats de notre étude ont indiqué que Lubumbashi se trouve dans une région à forte endémicité pour le VHB et rapportent pour la première fois des souches de VHB de génotypes A, E, A1/E et A3/E. Ils soulignent la nécessité de mettre en œuvre des stratégies d'amélioration de la sécurité transfusionnelle dans les centres de transfusion sanguine et les banques de sang hospitalières de Lubumbashi afin de réduire l'infection par le VHB chez les receveurs. Ils pourraient également contribuer à la mise en œuvre de stratégies de traitement et au développement de la cartographie des génotypes du VHB circulant en RDC.

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Séroprévalence des hépatites B et C chez les donneurs de sang au CNTS de Conakry de 2007 à 2011

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Background: L'objet de notre recherche était de contribuer à l'étude de la séroprévalence des hépatites B et C chez les donneurs de sang au Centre Nationale de Transfusion Sanguine de Conakry (CNTS) en République de Guinée.

Méthodes: Il s'agissait d'une étude rétrospective de type descriptif allant de janvier 2007 à décembre 2011. Pendant cette période nous avons tiré d'une manière aléatoire simple 970 fiches de donneurs de sang, dont les 77,10% représentaient les donneurs familiaux et les 22,90% les donneurs volontaires. Les variables sociodémographiques étudiés étaient : Le sexe, l'âge et la profession.

Résultats: Nos constats sont les suivants : La fréquence de l'hépatite B chez les donneurs de sang était de 9,9 % avec un IC : [8,1% - 12,0%], le sexe masculin dominait avec un sexe ratio de 5,7% soit une prévalence au VHB de 10,4% contre 7,1% pour le sexe féminin ; l'intervalle d'âge la plus atteinte par le VHB était de 20 à 29ans soit une prévalence de 11,1%. La fréquence de l'hépatite C était de 0,5% avec un IC : [0,2% - 1,3%] dont une prévalence de 0,6% pour le sexe masculin et 0% pour le sexe féminin ; l'intervalle d'âge la plus atteinte par le VHC était des moins de 20ans soit une prévalence de 4,2%. Un seul cas de coïnfection du VHB au VHC avait été détecté. Il n'existait aucune différence significative entre les fréquences observées au sein des deux types de donneurs : volontaire (n= 222 ; VHB += 6,3% ; VHC+ = 0,9%) et familiaux (n= 748 ; VHB+ = 11% ; VHC+= 0,4%).

Conclusion: Les résultats confirment une endémicité de l'infection par le virus de l'hépatite B à Conakry et donnent une idée de la circulation du virus de l'hépatite C.