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ABSTRACT BOOK

9th Central and Eastern European Meeting on Viral Hepatitis and HIV
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9th Central and Eastern European Meeting
on Viral Hepatitis and HIV 2025

In-Person Meeting

5 – 6 November 2025

Bucharest, Romania



1

Transmission Characteristics and Evolutionary Dynamics of HIV-1 Epidemic in Serbia

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Background: Since 1985, when the first HIV case in Serbia was registered, HIV-1 epidemics have evolved to different scenarios in terms of subtype distribution, transmission routes and characteristics of transmission clusters. This research was aimed to understand the transmission characteristics and evolutionary dynamics of HIV-1 epidemic in Serbia and to reveal the socio-demographic and clinical factors that shaped the expansion of the major phylogenetic transmission clusters through advanced phylogenetic and statistical analysis. The dataset of 740 HIV-1 pol sequences isolated from both newly diagnosed and therapy experienced healthcare clients, between 2002 and the end of 2024, was used.

Methods: Maximum Likelihood (ML) phylogenetic trees were constructed using IQ tree and MEGA software. In order to estimate effective reproductive number (Re), phylodynamic analysis was performed in BEAST 2.7 software package. Transmission clusters were defined based on both genetic distance (up to 4.5% of genetic distances) and bootstrap support/posterior probability values. For each of the sequences within the identified transmission cluster, 5 to 10 mostly similar sequences were retrieved from GenBank based on BLAST analysis and included in the tree reconstruction. Transmission clusters were further evaluated using advanced statistical latent class analyses (LCA) in R software and with polCA software package to determine association of

identified clusters with underlying epidemiological and clinical characteristics of healthcare clients.

Results: Transmission cluster analysis revealed the presence of 27 HIV transmission clusters, encompassing in total 42% (310/740) sequences. Of those 9/27 transmission clusters were found intermixed with sequences retrieved from BLAST analyses, sampled predominantly in the neighbouring countries, from the Balkan region, and could be considered as cross-border transmission rather than local. Ten of 27 local transmission clusters were found with Re higher than 1 in the latest years. Latent class analysis revealed the presence of five latent classes. Of note, one latent class that encompassed health care clients whose viral sequences were grouped within transmission clusters, was characterised by for the most part male clients reporting sex with men (MSM) as risk for acquiring HIV infection, of younger age, presenting in early CDC stage, in the recent years of epidemic, and with considerable prevalence of HBV and HCV co-infections and other sexual transmitted illness (STIs).

Conclusions: Transmission dynamics of HIV spread in Serbia is linked to transmission clusters formation, which are connected to young MSM with concomitant STIs as the main target group for planning structured preventive policies. Presented results based on the Re trends estimated through birth-death plots, imply that HIV epidemic in Serbia is still in the exponential growth phase suggesting further HIV spread through local transmission clusters.



2

A Study on the Experience of Women Living with HIV in Romania: The Impact and Dynamics of Stigma on Social and Medical Integration

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Background: After more than 30 years since the discovery of the first HIV cases in Romania, quality of life became essential for both people living with HIV and professionals. In this context, the study carried out by HIV Outcomes Romania, The National Institute for Infectious Diseases "Prof. Dr. Matei Bals", Bucharest and eight HIV Regional Centres in the country between 2022-2023 aimed to assess the experiences and quality of life of women living with HIV. Social and medical integration were the main elements of analysis, as well the way women perceive them.

Material and methods: The study lot consisted in 1050 persons living with HIV in Romania under the surveillance of eight Regional HIV Centres. Of them, 361 were women, 29,5% being part of the Romanian cohort. The mean age was 38 years. Quantitative analysis was combined with qualitative insights, enabling a holistic understanding of the HIV phenomenon in our region. A rigorous approach combined structured surveys and in-depth interviews to capture complex perspectives. Ethical considerations were a core concern resulting in thorough analysis of data, for patterns and nuances.

Results: The results emphasized both the perceptions of women living with HIV and the challenges related to social and professional integration. Thus, in terms of social inclusion, percentages vary from 38,9% low level of acceptance within the society to 29,7% medium acceptance, this indicating discrepancies within the general mentalities. When it comes to mass

media information, 70,6%-74,8% of respondents consider them relevant. Inclusion in the education system and peer groups is considered difficult, 78,3% of respondents correlating this item with schools and 45,3% with the work environment. However, there is a duality in terms of perception, 64,2% indicating high vulnerability to exclusion while 61,4% trust that they will be socially included. In what concerns medical needs, approximately half of respondents (50,6%) outlined the necessity to access other medical services and a significant majority (56,6%) felt that the relationship between healthcare professional-people living with HIV needs to improve. As for social support, most respondents (77,4%) opt for confidentiality while 41% foresee a low probability of stigma.

Conclusions: The study portrays women as a gamechanger in terms of perception and management of challenges in all people living with HIV in Romania.

First, the varied perceptions on acceptance and social integration accentuate the need to raise awareness and to educate. These two areas can place women at the core of awareness campaigns by working with the communities to promote acceptance and diversity. Second, the medical and social needs reflect the momentum for more tailored services, in a multidisciplinary context, oriented towards a more empathetic communication between the care team and the persons they provide services to. Given this, women may have a crucial role in how stigma is approached, in the education process (professionals as well as members of families and communities) by promoting improved access to medical services and social integration of people living with HIV.



3

Hepatitis B Coinfection and Awareness among Patients with Active Tuberculosis in Georgia: A Cross-Sectional Study

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Background: Tuberculosis (TB) and hepatitis B virus (HBV) remain significant public health concerns globally. TB is a leading cause of infectious disease mortality, while HBV affects millions worldwide, leading to cirrhosis and hepatocellular carcinoma. However, patients with TB disease in Georgia are not routinely tested for HBV, and the prevalence of chronic HBV among TB patients is unknown. We aimed to assess the prevalence of HBV coinfection and immunity among persons with TB in Georgia and evaluate their HBV-related knowledge and attitudes toward vaccination.

Methods: We conducted a cross-sectional study among persons with active TB disease at the National Center for Tuberculosis and Lung Disease in Georgia, enrolling consecutively from September 20, 2024, to February 20, 2025. All participants underwent serological testing for hepatitis B surface antigen (HbsAg), hepatitis B surface antibody (anti-HBs), and hepatitis B core antibody (anti-HBc). A structured questionnaire was administered to assess HBV knowledge, vaccination history, and willingness to receive HBV vaccination.

Results: We enrolled 110 participants (mean age=45.5, range: 18–83), of which 63.6% were male. Half of the participants (50.9%, n=56) had secondary education. Four participants (3.6%) were HbsAg positive. HBV test results showed 14 (12.7%) had past HBV infection with anti-HBc+/anti-HBs+, and 7 (6.4%) had past HBV infection with anti-HBc+/anti-HBs-. Another seven

(6.4%) had vaccine-induced immunity (anti-HBc-/anti-HBs+), and 82 (74.5%) were susceptible to HBV infection. While 73.6% (n=81) had heard of HBV, only 50.0% (n=55) correctly knew at least two transmission routes of hepatitis B. Only 16 patients (14.5%) were willing to receive vaccination, with the barriers being concerns about safety (34.9%), effectiveness (23.3%), and infection risk (20.9%). Participants with vocational or higher education were significantly more likely to be younger (≤ 40 years) compared with those with only secondary education (OR = 2.29; 95% CI: 1.05–5.01). They were also more likely to have heard of hepatitis B (OR = 2.78; 95% CI: 1.13–6.84), to perceive HBV as a serious health problem for Georgia (OR = 5.47; 95% CI: 2.41–12.39), to believe HBV is contagious (OR = 2.85; 95% CI: 1.31–6.18), and to correctly identify at least two transmission routes (OR = 2.33; 95% CI: 1.03–5.29).

Patients aged >40 years (25.8%) were significantly more likely to have anti-HBc positive result compared to those aged ≤ 40 years (9.1%) (OR = 3.47; 95% CI: 1.08–11.14). Participants aged ≤ 40 years were significantly more likely to be knowledgeable about HBV compared to those over 40 (OR=3.39, 95% CI: 1.25–9.20).

Conclusion: TB-HBV coinfection underscores the need for routine HBV screening among TB patients in Georgia. Low vaccination coverage and limited knowledge highlight the importance of integrating HBV education and vaccination into TB programs to reduce coinfection risks and improve patient outcomes. The lower awareness among older and less-educated patients highlights the need for tailored educational interventions within TB care.



4

Whole Genome HIV-1 Sequencing in People Living with HIV in Serbia

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Background: One of the crucial aims of HIV-1 genome sequencing lies in detecting the presence of drug-resistant mutations (DRMs) and consequently providing a suitable antiretroviral therapy (ART). The possibility of screening more samples cost-effectively, as well as higher sensitivity for detection of low-frequency variants, has made next generation sequencing (NGS) a new standardized method for HIV-1 genotyping. The aim of this overview is to introduce the results of newly implemented whole genome sequencing of HIV-1 in people living with HIV (PLHIV) at University Clinical Centre of Serbia (UCCS).

Methods: A total of 47 samples (44 blood samples and 3 cerebrospinal fluid samples) with a median HIV-1 viral load of 68.800 cp/ml (Abbott RealTime HIV-1 Viral Load Assay, USA) from UCCS were analyzed, dating from March to August 2025 and including both ART-naïve and experienced individuals (33 and 14 respectively). Firstly, HIV-1 RNA from selected samples was extracted using Abbott m2000sp automated system. According to manufacturer's protocol, extracted RNA was reverse-transcribed and amplified using DeepChek® Whole Genome HIV-1 Genotyping Assay (ABL SA, Luxembourg), while DeepChek® NGS Library Preparation + Adapters kit (ABL SA, Luxembourg) was used for library preparation. Finally, samples were sequenced on Illumina iSeq100 platform, followed by analysis using MicrobioChek® software versions 2.10.2-2.11.2, with one threshold ranging from 3% to 20% and the other set at above 20%.

Results: Across all samples, median coverage was 81.45%. The vast majority of samples (n=39, 83%) were classified as subtype B and all the remaining samples (n=8, 17%) were determined to belong to subtype A, of which 5 (11%) subtype A6 and 3 (7%) subtype A1. Prediction of HIV-1 co-receptor

tropism showed that 77% of samples are R5-tropic, whereas 23% exhibited dual-mixed (D/M) tropism. High-level resistance mutations were not detected at above 20% threshold in therapy-naïve individuals. Prevalence of DRMs was the highest for nonnucleoside reverse transcriptase inhibitors (NNRTIs; n=10, 29% for either intermediate or high-level resistance), with smaller numbers detected for nucleoside reverse transcriptase inhibitors (NRTIs; n=3, 7% for high-level resistance) and integrase inhibitors (INIs; n=2, 5% for high-level resistance). No capsid inhibitor (CI) or protease inhibitor (PI) resistance mutations above 20% threshold were observed.

Conclusions: Dominant prevalence of subtype B is in accordance with previous findings for Serbian population. However, previously reported G and C subtypes are completely absent from this sample, while sub-subtype A6 (traced to the countries of the former Soviet Union) is second most prevalent. The DeepChek Whole Genome HIV-1 Assay used on Illumina iSeq100 platform is a practical solution for future surveillance of HIV-1 epidemiology and monitoring of DRMs in patients in Serbia.



5

High Acceptability but War-Related Challenges: The First Year of CAB-LA PrEP Implementation in Ukraine

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Background: Pre-exposure prophylaxis (PrEP) is a cornerstone of global HIV prevention strategies. While daily oral regimens have demonstrated high efficacy, the effectiveness of any form of PrEP depends critically on adherence. Long-acting injectable cabotegravir (CAB-LA), administered intramuscularly every two months, represents an innovative approach with the potential to overcome adherence-related barriers. In 2024, Ukraine introduced CAB-LA as PrEP in two cities, Kyiv and Lviv, providing a unique opportunity to evaluate feasibility, acceptability, and retention in the context of the ongoing full-scale invasion of Ukraine by the Russian Federation.

Methods: Program monitoring data were analyzed for the first year of implementation (August 2024 – July 2025). Key indicators included the total number of injections administered, the number of clients initiating CAB-LA, and the number continuing on CAB-LA. Retention and discontinuation patterns were assessed to identify adherence challenges and overall program performance.

Results: A total of 861 injections were administered: 556 in Kyiv and 305 in Lviv. In total, 194 clients initiated CAB-LA (113 in Kyiv; 81 in Lviv). Among these, 40 discontinued PrEP (18 in Kyiv; 22 in Lviv), while 154 remained on CAB-LA (95 in Kyiv; 59 in Lviv), reflecting an attrition rate of approximately 21%. Discontinuation was associated not only with transient adverse events such as fever and injection-site pain (6 clients: 3 in Kyiv, 3 in Lviv), but also with conflict-related factors. These included mobilization for military service (9 clients: 4 in Kyiv, 5 in Lviv) and displacement, both internal (4 in Lviv) and external (4 clients: 3 in Kyiv, 1 in Lviv), which disrupted injection schedules despite the high acceptability and effectiveness of CAB-LA. Other reasons

included reduced perceived HIV risk, for example, due to having a stable sexual partner.

Conclusions: The implementation of CAB-LA PrEP in Ukraine demonstrates that this long-acting injectable HIV prevention strategy is feasible, acceptable, and effective, even under the extraordinary circumstances of war. Clients reported high levels of satisfaction and positive experiences, confirming CAB-LA as a client-centered and effective HIV prevention option. At the same time, conflict-related disruptions—particularly population displacement and military mobilization—pose significant challenges to continuity of PrEP. These findings highlight the urgent need for tailored interventions to address such barriers and for expanding access to HIV prevention services, including among individuals in military service. Overall, the use of long-acting PrEP during wartime shows promising outcomes, supporting its role as a highly effective and client-friendly HIV prevention tool in conflict-affected settings.



6

Community-Based PrEP Programs in Romania

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Background: In Romania, even if the National HIV Strategy states since 2022, the necessity for PrEP provision for all individuals at high risk of acquiring HIV, no financial support has been provided from the Ministry of Health. Since November 2023, in Bucharest and December 2024, in Cluj-Napoca, PrEP is offered through community-based settings by ARAS with funding from the Elton John AIDS Foundation.

Methods: An observational study was performed including individuals who received oral PrEP (generic emtricitabine/tenofovir disoproxil - FTC/TDF) at PrEPpoint ARAS Bucharest and PrEPpoint ARAS Cluj, between November 2023 and August 2025. Participants enrolled in daily program receive PrEP initially for 1 month, next visit for 2 months and then every 3 months with clinical and laboratory monitoring; participants in the on-demand program receive 30 pills/visit with the requirement to come back no more than 3 months apart, clinical and laboratory monitoring done each visit. Data regarding demographic characteristics, PrEP eligibility, retention to PrEP and STIs were analyzed using descriptive statistics.

Results: A total of 359 individuals were enrolled and received at least once during the study period: 57% participant have chosen the daily administration program and 43% on-demand. Almost half of them have taken PrEP before at least once.

The median age was 31 years old (IQR 26-38). 99% identified as GBQMSM; 38% used chemsex and/or participated in sex parties the last 12 months. During the study period, three persons have been diagnosed with HIV, two at the first visit and one at 1 month visit, but participant reported not taking PrEP during this period; also, one person has been diagnosed with hepatitis C at first visit and one with hepatitis B. All were linked to an

infectious diseases clinics for further management. Over the follow-up period, 18 (5%) cases of Syphilis have been diagnosed.

132 (36%) of participants have either stopped or used inconsistently PrEP and were excluded from the program.

114 (31%) persons have been vaccinated against hepatitis B (at least 1 dose during the reported period)

69 (19%) persons have been vaccinated against HPV (at least 1 dose during the reported period) Doxy-PEP distribution has been initiated in recent months.

Conclusions: The program was and continues to be efficacious and well received in the community and can serve as a model for PrEP scale-up in Romania for all key groups.



7

HPV Prevention Strategies among Women Living with HIV: Gaps and Opportunities

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Background: Human papillomavirus (HPV) is the most prevalent sexually transmitted infection worldwide and is strongly associated with the development of anogenital lesions and various cancers, particularly cervical cancer. In women living with human immunodeficiency virus (HIV), immunosuppression promotes persistent HPV infection, increasing the risk of high-grade lesions and progression to malignancy. This population is therefore a priority for both primary prevention (HPV vaccination) and secondary prevention (regular cervical screening).

Objective: To characterise cervical cancer screening and HPV vaccination uptake among women living with HIV through retrospective analysis of clinical data of female patients followed in the immunodeficiency clinic of a district hospital in Portugal.

Results: Of the 983 patients followed in the outpatient clinic, 265 (27%) were women, 97% of whom were living with HIV type 1 infection. The median age was 52 years (range 23–83), and 68% were born in Portugal. The median time since HIV diagnosis was 13 years (range 1–31), with sexual transmission being the mode of HIV acquisition in 89% of cases. Approximately 96% had undetectable viral loads at their last consultation, with a median CD4+ T-lymphocyte count of 667 cells/ μ L. The majority of women (84%) were screened for cervical cancer, however only 51% were in line with the European AIDS Clinical Society (EACS) 2024 guidelines. Screening was conducted in a primary care setting in 55% of cases, and in a hospital setting in 33%, with the latter group demonstrating a greater adherence to the EACS 2024 guidelines (63% vs. 53%). HPV testing yielded positive results in 18% of women, predominantly for non-16/18 genotypes. Cytology

results showed that 65% were negative for intraepithelial lesion or malignancy (NILM), and women with high-grade lesions had lower median CD4+ counts than those with NILM results (548 vs. 703 cells/ μ L). High-grade lesions were identified in 13% of women, with one case of cervical cancer. Only 12% of women had received HPV vaccination, with the nonavalent vaccine being the most common.

Conclusions: Despite high rates of cervical screening, only half of the women met the specific recommendations in the most recent European guidelines. The implementation of shared protocols between the Infectious Diseases and Gynaecology departments could have a positive impact on bridging this gap. The low HPV vaccination uptake in this population highlights a significant shortfall in primary prevention, likely related to financial barriers, as HPV vaccines are not government-subsidised for this population. Given the increased risk associated with HIV and HPV coinfection, it is essential to strengthen primary prevention measures and ensure effective surveillance for early detection and treatment of premalignant lesions.



8

HIV-1 Matrix Protein P17 Variants and Lymphoma Risk: Developing a Novel Prognostic Tool Using Next-Generation Sequencing

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Background: Non-Hodgkin lymphoma (NHL) remains a leading malignancy and cause of death among people living with HIV-1, despite the use of combined antiretroviral therapy. Insertions in the HIV-1 p17 matrix protein (p17), specifically in its C-terminal region, generate distinct molecular variants (vp17s). Some vp17s are more prevalent in HIV-1-positive individuals with NHL compared to those without, and display B-cell clonogenic activity, in contrast to the reference p17 (from subtype B strain BH10). We aim to develop a novel Next-Generation Sequencing (NGS) method to detect dominant and subdominant vp17s in the plasma of people living with HIV-1, both with and without NHL, enabling early identification of those at higher risk of developing lymphoma.

Material and Methods: Plasma samples from 60 viremic HIV-1-positive individuals (≥30 copies/mL HIV-1 RNA) with NHL and 60 without NHL were analyzed. RNA was extracted from 200 µL of plasma, reverse transcribed, and amplified using a one-step reverse transcription-polymerase chain reaction system. A 153-nt region of the p17 gene was amplified and sequenced using an amplicon-based NGS approach. Raw reads were quality-checked using FastQC and trimmed with Trimmomatic (Q>30, length>100 bp), then aligned to the reference p17 sequence (AF324493) using

Bowtie2. Consensus sequences were generated, and variant calling was performed with the Variant Finder Tool in Geneious (v11.1.5). Vp17s were identified based on a minimum coverage of 100 reads and a minor allele frequency ≥0.5%, and insertions were considered valid only when detected in reads spanning the entire amplicon. A quasispecies was deemed significant if the insertions appeared in at least 10% of the mapped reads.

Results: NGS analysis of the p17 from plasma of 60 viremic HIV-1-positive individuals with NHL and 60 controls showed that 78.2% of samples contained viral quasispecies with one or more amino acid (aa) insertions in the p17 sequence. Insertions were most frequent at positions 117–118 (82% of samples) and 125–126 (31.1%), with lower-frequency events at positions 114–115, 122–123, 126–127, 127–128, and 130–131. A total of 34 different aa insertions were identified, and 19.7% of samples carried multiple insertions, among which 33.3% harbored three aa insertions and 66.7% two aa insertions, mainly at positions 117–118 and 125–126. At 117–118, alanine-rich insertions predominated, including single alanine (A, 16% of all detected insertions), threonine-alanine (TA, 14%), double alanine (AA, 12%), and triple alanine (AAA, 12%). At 125–126, serine-rich insertions were most common, with single serine (S, 35% of analyzed sequences) and serine-glutamine-alanine (SQA, 10%) being the most frequent.

Conclusions: These data demonstrate that p17 exhibits position-specific preferences for aa insertions, particularly at positions 117–118 and 125–126, which may influence its structure, function, and oncogenic potential. Future work will focus on developing a user-friendly bioinformatic pipeline to streamline NGS data analysis and defining “oncogenic levels” of vp17s through statistical correlation with patients’ clinical histories. With further in vivo validation of vp17s with oncogenic significance, this NGS approach has the potential to become a robust molecular prognostic tool for the early identification of HIV-1-positive individuals at increased risk of developing lymphoma.

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9

HIV-Related Knowledge, Attitudes, and Stigma among Romanian Nurses

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Introduction: Nurses play a central role in the healthcare system and are essential providers of patient care across all medical specialties. Stigma, misconceptions, and limited knowledge may negatively affect the care of people living with HIV, but these are not routinely measured in clinical practice. To address this gap, this study aimed to assess HIV-related knowledge, attitudes, and practices among Romanian nurses.

Methods: Between September and December 2023, the European Centre for Disease Prevention and Control, together with the European AIDS Clinical Society, carried out a survey addressing HIV-related stigma in healthcare settings. The present analysis focuses on Romanian nurses, evaluating their knowledge, perceptions, and attitudes towards HIV and their HIV-related stigma. Questions about undetectable = untransmittable (U=U), post-exposure prophylaxis (PEP), and pre-exposure prophylaxis (PrEP) were used to assess knowledge scores, with a minimum of -3 points and a maximum of +3 points. Any score higher than or equal to 1 point was considered to indicate good knowledge.

Results: A total of 176 nurses responded to the survey. The median age was 44 years (IQR: 35-49.5 years), and the majority were women (n=157, 89.2%). More than half (n=101, 57.4%) had provided care for people living with HIV. A good level of HIV-related knowledge (total score >1 point) was identified in only 38.1% of nurses, and the median knowledge score was -1 point (IQR: -1, +1 point). Specifically, 43.8% were knowledgeable about U=U, 60.2% about PEP, and only 8.5% about PrEP. Wound care (54.0%) and drawing blood (54.5%) were the procedures most commonly feared and avoided when caring for people living with HIV. Wearing gloves during all

aspects of patient care (83.5%), double gloving (33.5%), and the use of special infection prevention and control (IPC) measures (60.2%) were frequent practices. We identified statistically significant associations between lower knowledge scores and each of these excessive IPC practices ($p < 0.001$ for each). Previous experience in caring for people living with HIV did not significantly influence practices such as wearing gloves during all aspects of care ($p = 0.208$, 93.0% vs. 87.1%), double gloving ($p = 0.206$, 33.7% vs. 42.6%), avoiding physical contact ($p = 0.745$, 10.3% vs. 12.1%), or using special infection-control measures ($p = 0.221$, 63.9% vs. 73.3%).

Conclusions: Romanian nurses exhibited limited knowledge about HIV and key prevention concepts such as U=U and PrEP, which was in turn associated with excessive IPC practices applied to care. The presence of these practices, regardless of prior experience with people living with HIV, highlights important areas of focus for strengthening HIV-related training and professional development for nurses in Romania.

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10

From Barriers to Breakthroughs: PrEP Access for Transgender People in Georgia

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In the mid-2020s, Georgia stood at a critical juncture in the fight against HIV/AIDS. Despite its pioneering role as the first country in Eastern Europe and Central Asia to formally integrate pre-exposure prophylaxis (PrEP) into national prevention programs for men who have sex with men (MSM) and transgender people, access for transgender communities remained profoundly limited. The “Expertise of PrEP Access for Transgender People in Georgia” (2025) provided the first comprehensive multidisciplinary assessment of the political, legal, medical, cultural, and economic structures that shaped this reality.

The expertise revealed that formal inclusion of transgender people in national HIV strategies was largely declarative, systematically undermined by discriminatory laws, regressive legislative trends, and donor dependency. Most notably, the Law on Civil Acts (No. 5562) and the 2024 “Law on Family Values and Protection of Minors” (No. 2406-II) imposed structural barriers to legal gender recognition, criminalized gender transition, and legitimized systemic stigma.

Medically, while PrEP was technically available, the absence of national clinical protocols tailored for transgender patients—especially concerning co-administration with hormone therapy—produced uncertainty for both providers and users. Institutional neglect extended to the lack of trans-friendly clinics, the failure to integrate psychosocial support, and the near absence of professional training in gender-sensitive care. Economically, even when PrEP medication was provided free of charge through international donor funding, hidden costs (testing, travel, lost work hours) rendered prevention inaccessible for many. With unemployment rates among transgender people exceeding 50%, PrEP use was

restricted to those with NGO support or personal privilege.

Socioculturally, Georgia in the 2020s was dominated by conservative, religious, and nationalist discourses that positioned transgender identities as threats to “traditional values.” This environment intensified stigma, eroded family and community support systems, and silenced public dialogue. The resulting climate of fear ensured that transgender individuals were simultaneously hyper-visible in political debates yet invisible in epidemiological reporting, rendering them both scapegoated and statistically erased.

The 2025 expertise, however, also documented pathways of resilience. Non-governmental organizations and community activists filled critical service gaps, creating safe spaces, piloting peer support models, and advocating internationally. These actors demonstrated that structural barriers could be mitigated when transgender people were not merely beneficiaries but co-designers of health services. The report’s recommendations—ranging from legal reform and the institutionalization of trans-inclusive clinical protocols to the integration of psychosocial services and the establishment of community-led monitoring—anticipated the frameworks that, in subsequent decades, became cornerstones of rights-based health policy.

Looking back from the mid-21st century, this expertise stands as a pivotal historical record. It captured not only the acute vulnerabilities of a marginalized population but also the seeds of transformation that informed later reforms. Its findings remind us that HIV prevention was never solely about medication, but about dismantling systems of exclusion and building infrastructures of dignity. The Georgian case illustrates a broader global truth: equitable access to PrEP requires more than biomedical innovation—it requires the political courage, cultural shifts, and community leadership that reimagine health as a right rather than a privilege.



Poster Abstract Presentations

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High Virologic Suppression in Treatment-Naïve People with HIV-1 on AINUOVIRINE- Versus Efavirenz-Based Antiretroviral Regimen as Initial Therapy: Effect of Pretreatment NNRTI Resistance from RACER Trial, a Multi-Center, Randomized, Active-Controlled Study

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Background and Purpose: Pre-treatment drug resistance (PDR), especially to non-nucleoside reverse transcriptase inhibitor (NNRTI), is a major therapeutic concern over antiretroviral treatment (ART). This study aimed to evaluate the effects of PDR to NNRTI on virologic efficacy of aINUOVIRINE- (ANV), a new-generation NNRTI with high genetic barrier to resistance, versus efavirenz- (EFV) based regimen as initial therapy for treatment-naïve people with HIV-1 (PWH).

Material and Methods: Six hundred and thirty eligible treatment-naïve PWH aged between 18 and 65 years were equally randomized to receive ANV or EFV (n=315 per arm), both combined with lamivudine and tenofovir DF, for 48 weeks. Upon completion of the base study, 580 participants continued or switched to ANV-based regimen through 96 weeks. The HIV-1 pol gene fragment was sequenced for the entire protease (codons 1-99), and the first 300 codons of reverse transcriptase at baseline, and analyzed against the Stanford HIV Drug Resistance Database. Viral suppression (VS) was defined as HIV-1 RNA titer below 50 copies/mL as per US FDA snapshot algorithm. The primary efficacy endpoint was the proportion of participants with VS at week 48 for PWH with concomitant PDR to NNRTI alone subgroup with the intention-to-treat-exposed analysis.

Results: Genotyping was successful in 625 participants (99.2%), but failed or was not done in 5 participants (0.8%). PDR was detected in 104

participants (16.5%), and that to NNRTI alone was detected in 73 participants (11.6%), including 44 in ANV group (7.0%) and 29 in EFV group (4.6%), respectively, with V179E (n=48, 7.6%) as the most frequent resistance-associated mutation (Figure 1). For participants with concomitant PDR to NNRTI alone, the proportion of participants with VS in ANV arm was noninferior to, and numerically higher than that with EFV arm at week 48 (86.4% vs. 72.4% with missing-as-failure analysis).

Conclusion: ANV-based antiretroviral regimen achieved a relatively high VS in treatment-naïve PWH although PDR to NNRTI prevailed in the study population. In consideration of additional safety benefits of ANV compared to EFV, ANV-based regimen is recommended as a first-line treatment of option alternative to EFV-based regimen.



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AIDS Restricted Genes, Potential Genes Therapy Site in the Northern Cameroon

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Background: HIV infection and its progression to AIDS depend on several factors including host genetic factors. The immunological mechanisms of host resistance to HIV infection greatly influence the prevalence of HIV in a given region. Worldwide, Cameroon not exempted, the frequency of AIDS-associated genes varies and may influence this prevalence. The North and Far North Regions of Cameroon have had the lowest HIV prevalence in the country for many years despite risky behaviors associated with their customs and habits. In this work, we seek to explore the contribution of host genes to the HIV low prevalence in these regions.

Methodology: Five genes variants previously described as HIV AIDS related were studied. These genes are: CCR5Δ32, CCR5promoter59029G, CCR2-64I, SDF1-3'A and Trim5α(R136Q). A total of 384 consented participants were included in this study. The HIV serological status was confirmed using national algorithm. Genomic DNA was extracted from the buffy coats and used for genotyping. The results obtained were compiled in Excel 2016, Epi Info 7.1 and snpStats software and Chi two tests allowed us to compare the frequencies of the AIDS related alleles in the North with those in other Regions of Cameroon and to measure the impact of these ARGs on protection against HIV.

Results: The frequency of protective alleles CCR5Δ32, CCR5promoter59029G, CCR2-64I, SDF1-3'A and Trim5α(R136Q) was the allelic frequencies should be expressed as percentages i.e. 0.52%; 37.56%; 36.46%; 25.19% and 69.33%. These allelic frequencies exhibited a significant difference when compared to those obtained in other regions of Cameroon ($p < 0.01$). Protective alleles were predominant in the Northern region compared to others and were associated with resistance to HIV [$(p < 0.0001)$; OR = 2.02 CI, 95%].

Conclusion: The higher frequency of HIV-protective alleles in the northern regions may be a contributing factor to the lower prevalence of HIV. Nevertheless, this should be reinforced by other preventive and surveillance methods to guarantee the sustained low prevalence. HIV can develop resistance through the process of mutation, but the host targets themselves are genetically stable. The study of these host genetic restriction factors is of great value in the design of a practical cure for HIV infection or an effective vaccine.



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Spatial Distribution and Determinants of Tuberculosis Incidence in Eastern Province of Zambia: A Provincial Bayesian Disease Mapping Investigation

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Introduction: Tuberculosis (TB) is a deadly disease as well as endemic in Zambia, particularly the worst-affected Eastern Province, also referred to as The Great Imitator. Sadly, spatial patterns and factors associated with its transmission remain largely unknown here. This study aimed to identify TB incidence and identify the sociodemographic and environmental predictors that drove or hindered the spread of the disease.

Materials and Methods: An ecological study design was used, and the base data were 15 districts in Eastern Province. The "unit of analysis" for this research was a District or Ward, where groups of smaller Wards were referred to when data was analyzed. Since these two groups are geographically coded (case and population), we opted for spatial analysis.

Results: There was significant spatial variation. There was a clustering of TB cases, with areas of Petauke, Nyimba, and Katete having high incidence hot spots (Relative Risk, RR=476-547). Cold spots (Chipata, for example) showed RR of 19-80. Malnutrition showed a strong positive relation with TB cases ($\beta = 0.00053$, $p = 0.008$), Poverty showed a small negative relation ($\beta = 0.00013$, $p = 0.097$), and HIV was not significant ($\beta = 0.046$, $p = 0.403$). Research started with a hotspot analysis, and the corresponding Z-values indicated high spatial autocorrelation for all three districts in NW Zambia, ranging from 1.5 to 1.8. Spatially associated variation of this magnitude is to a great extent the result of high population density in areas where access to healthcare is minimal for both of which represent a confluence of factors in the genesis of new infectious disease.

Conclusion: This work illustrates the potential impact of Bayesian disease mapping on the identification of TB hot spots and socio-economic key drivers behind TB in Eastern Province. Specific interventions also suggested for immediate implementation were malnutrition information, local health care, and district campaigns in at-risk districts the district. The results of this study support that Zambia's TB control program guidance focuses on the allocation of funds to ensure the integration of HIV and TB programming in some of these high-burden areas.



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Anti-HBcor and Anti-HBs in HBsAg Negative Patients with Chronic Hepatitis C Infection

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Introduction: Co-infection with HBV and HCV increases the progression of liver damage and the development of end-stage liver disease and HCC compared to mono-infections. Patients without HBsAg but with anti-HBcor are at risk for HBV reactivation during antiviral therapy for HCV infection, as well as when receiving immunosuppressive therapy, especially in the absence of protective anti-HBs titers.

Aim of study: To assess the frequency of anti-HBcor and anti-HBs in HBsAg negative patients with chronic hepatitis C infection (CHC).
Materials and methods. The study included 263 HBsAg negative patients with CHC without acute hepatitis B in the past. Patients were before receiving DAAs. Among them, there were 23 (8.7%) patients with HIV/HCV co-infection. All patients were determined to have anti-HBs, anti-HBcor.

The biological material for determining hepatitis B markers was the serum of venous blood of patients. Detection of anti-HBs, anti-HBcor was performed by immunochemical analysis on an automatic immunochemical analyzer ARCHITECT ABBOTT i1000SR.

HBV DNA was determined by polymerase chain reaction (PCR) on a CFX96 Touch amplifier in real time. Statistical analysis was performed using the "Statistics" v.10 package.

Results: Anti-HBcor was negative in 166 (63.1%) patients. Of these, 8 (4.8%) were people living with HIV (PLWH). In 35 patients (21.1%) of this group, the anti-HBs level was more than 10 IU/ml, which can serve as an indicator of the presence of immunity against HBV infection, of which 3 (8.6%) were PLWH. In 131 (78.9%) patients without serum anti-HBcor, the protective level of anti-HBs was not detected.

In 97 patients (36.9%), anti-HBcor was positive, of which 15 (15.5%) were PLWH, which suggests a history of HBV infection in past; in 30 patients

(30.9%) of this group, the anti-HBs level was more than 10 mIU/ml, of which 2 (2.1%) were PLWH. 17 patients of this group underwent PCR testing to detect HBV DNA. HBV DNA was not detected in any patient.

Conclusions: Markers of previous HBV infection were detected in 36.9% of patients with CHC, while protective level of anti-HBs was formed in 21.1%. This group of patients requires additional monitoring and examination to exclude HBV reactivation, especially during antiviral therapy with DAAs. In 198 (75.3%) patients, protective anti-HBs titers were absent, which requires activation of vaccination programs against HBV for patients with CHC.



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Identification of NS5B Resistance-Associated Mutations in Hepatitis C Virus Circulating in Treatment Naïve Cameroonian Patients

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NS5B polymerase inhibitors form the basis of current treatment for hepatitis C virus (HCV) infection. Direct-acting antivirals (DAAs) offer highly effective treatment. However, the presence of mutations associated with resistance, particularly at the level of non-structural polymerase protein 5B (NS5B), may reduce their efficacy.

The aim of this study was to identify possible natural AAD mutations in the HCV NS5B gene associated with AAD resistance in treatment-naïve Cameroonian patients with chronic hepatitis C. Whole blood samples were collected. Plasma was then isolated and stored at -80°C for molecular analysis. Fragments of these genes were amplified with the specified primers and nucleotide sequences were obtained using the Sanger sequencing system and the resistance profile was analysed using Geno2pheno [hcv] 0.92.

Analysis of the NS5B sequences revealed three genotypes, namely 1, 2 and 4, with numerous amino acid mutations. The significant S282T mutation, which confers high resistance to SOF, was found in one patient, while the NS5B C316N polymorphism associated with resistance was found in 16 sequences. The Q309R mutation associated with ribavirin resistance was detected in 19 genotype 1 sequences and the L320F polymerase inhibitor mutation was found in one genotype 4f sequence. The following mutations were associated with DAA resistance: E237G, M289L, A333V, D310N, V321A and V321I were found in different genotypes in our study.

Our study showed several different mutations in the NS5B gene in HCV patients who had not previously received DAA therapy. These mutations may increase the risk of future treatment failure.



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Increased HIV and Other Sexually Transmitted Infections in Two Health Facilities in Northern Cameroon Between 2021 and 2022

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Background: Human immunodeficiency viruses (HIV) and acquired immunodeficiency syndrome (AIDS) remain a global public health problem. Other sexually transmitted infections (STIs) are aggravating factors.

Aim: This study aimed to assess the prevalence and identify new cases of HIV and STIs, as well as their associated risk factors.

Setting: Political insecurity in the northern regions of Cameroon has led to population displacement, weakening an already fragile health system.

Methods: A cohort of 684 consenting participants from the north and far north were enrolled in 2021 and followed up in 2022. Socio-demographic variables and risk behaviours were collected. Anti-HIV Ab, hepatitis B surface antigen, *Treponema pallidum* haemagglutination tests were performed. The data were analysed using Epi Info 7.5.2. The associations between variables were evaluated using the Chi-square test with a 95% confidence interval.

Results: The new cases of HIV rate and overall prevalence were 1.63% (95% confidence interval [CI]: 0.83% – 2.41%) and 3.8% (95% CI: 2.01% – 3.97%), respectively. New HIV cases increased from 0.27% (2017, Demographic and Health Survey [DHS]) to 1.63%. The prevalence of syphilis and hepatitis B was 1.03% (95% CI: 0.98% – 1.09%) and 4.56% (95% CI: 4.51% – 4.66%), respectively. Factors associated with HIV included religion ($p = 0.027$), unprotected sex ($p = 0.006$), sex with a sex worker ($p = 0.00009$), and co-infection with syphilis and hepatitis B ($p = 0.033$). New HIV

infections may also be associated with population displacement.

Conclusion: HIV infection, syphilis and hepatitis B are on the rise in the Northern Cameroon. Contribution: Future HIV prevention strategies should consider population displacement and HIV-associated infections such as hepatitis B and syphilis in order to secure achievements in HIV programme and further curb the burden of these infections in the country.



17

The Hurdles on the Road from C to Cure

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Background: Acute hepatitis C (HCV) infection is typically asymptomatic and progresses to chronicity in 55–85% of cases. It is associated with long-term complications, especially with additional hepatic insults. Historically, treatment was challenging due to both the limited efficacy of available options and by the vulnerability of the population most commonly affected. In 2015, Portugal heralded the introduction of pangenotypic direct-acting antivirals (DAAs), offering well-tolerated and simplified regimens with cure rates exceeding 95%, thus firmly establishing them as the standard of care for both individual treatment and HCV elimination.

Objective | Material and Methods: This study aimed to characterise all patients with HCV managed at an Infectious Diseases department in a district hospital in Portugal. A retrospective chart review was performed to collect and analyse epidemiological, clinical and laboratory data, prescribed treatments, and outcomes.

Results: A total of 249 patients with chronic HCV were identified between 2003 and 2025. Most were male (n=200; 80.3%) and born in Portugal (n=207; 83.1%). The mean age at first diagnosis was 39 years, and the earliest diagnosis dated back to 1990. Reinfection occurred in eight cases. Coinfection with human immunodeficiency virus or hepatitis B virus was observed in 27 (10.8%) and two (0.8%) patients, respectively. The most frequently identified risk factor was intravenous drug use (n=155; 62.2%); of these, 111 (71.6%) also had a history of non-intravenous drug use and 18 (11.6%) presented at least one additional risk factor.

Thirty-seven (14.9%) patients were referrals from the local Integrated Response Centre (CRI) following point-of-care antibody testing – of the patients referred via this pathway who initiated

treatment, a sustained virological response (SVR) was registered in 73.5% (n=25), and in 99.3% (n=150) of the remainder of the cohort who initiated treatment. Overall, SVR was not documented in 5.4% (n=10) due to missed post-treatment viral load testing. Among patients first diagnosed before 2015, 16.3% (n=14) had received at least one treatment course before achieving SVR with a DAA-containing regimen, compared with 2.4% (n=2) of those diagnosed after 2015 (reinfections excluded). Non-treatment was mainly due to loss of follow-up (n=21; 38.9%). The most common complication was cirrhosis (n=34; 13.7%), including one case of hepatocellular carcinoma; of these, 22 (64.7%) reported concomitant alcohol use. Cirrhosis was more frequent in patients first diagnosed before 2015 (17.5%, n=21) compared with those first diagnosed after 2015 (10.1%, n=13).

Conclusions: With DAAs now in play, bringing improved short-term outcomes and reduced long-term complications, the field has begun to level. A multidimensional, community-based approach is the next step forward. In June 2023, our hospital established a protocol with the Integrated Response Centre, a community organisation supporting people experiencing addictive behaviours and substance use disorders, in order to reach those with limited access to specialised care. Documented SVR was lower in this cohort due to post-treatment non-testing; the true rate likely approaches that of the wider cohort. Nevertheless, with 21.7% of patients not having yet initiated treatment, efforts must now focus on overcoming remaining barriers to cure, particularly those related to this population's complex biopsychosocial context.



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Prevalence of HBeAg Positivity and HDV Infection in Adults with Chronic Hepatitis B: A Pilot Cross-Sectional Study at Vilnius University Hospital Santaros Klinikos

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Background: Hepatitis B e-antigen (HBeAg) and hepatitis D virus (HDV) coinfection are important determinants of disease progression in chronic hepatitis B (CHB). HBeAg positivity reflects enhanced HBV replication and infectivity, while both HBeAg and HDV infection independently increase hepatocellular carcinoma (HCC) risk (1,2). Globally, anti-HDV prevalence is ~4.5% (~12 million individuals) (1). In Europe, HBeAg positivity is reported at 10.8–12.4% (3,4), through national data are lacking in several countries, including Lithuania.

Objective: To characterize the clinical, virological, and elastographic profile of Lithuanian adults with CHB and estimate HBeAg and HDV prevalence.

Materials and Methods: This ongoing cross-sectional study is conducted at Vilnius University Hospital Santaros Klinikos, Lithuania. Adults with CHB were consecutively enrolled. Collected data include demographics, treatment history, liver function, and virological markers (HBsAg, HBeAg, HBV-DNA, anti-HDV with confirmatory HDV-RNA, anti-HCV with HCV-RNA). Liver stiffness was measured by transient elastography (FibroScan® 402). Enrollment is ongoing. Statistical analysis was performed using IBM SPSS Statistics, version 30.0. Group comparisons were made using Mann-Whitney's U test for continuous quantitative variables and chi-square test (Fisher's exact test, where appropriate) for categorical variables. Association between continuous variables (e.g., liver stiffness with age and AST) were evaluated using Spearman's rank correlation

coefficient (ρ). Two-sided p-value <0.05 was considered significant.

The study protocol was approved by the Vilnius Regional Biomedical Research Ethics Committee (approval No. 2025/7-1679-1131). Written informed consent was obtained from all participants prior to enrollment.

Results: A total of 81 patients with CHB were included in the study (median age 45 years). The majority were male (60.5%). The median quantitative HBsAg level was 4091.34 (IQR 2502.89 – 5223.38) IU/mL. HBeAg positivity was identified in 8 patients (9.9%). Anti-HDV antibodies were detected in 3 patients (4.2%), HDV-RNA not yet performed. Anti-HCV antibodies were present in 4 participants (5.0%), although HCV-RNA was undetectable in all. Cirrhosis was documented in 3 patients (3.7%) and HCC in 1 patient (1.2%). HIV co-infection was observed in 2 participants (2.5%). Biochemical parameters were near normal: median ALT 30 U/L (IQR 23–44), median AST 26.54 U/L (IQR 22–31). Median HBV-DNA was 560 IU/mL (IQR 58–3,400) with a wide distribution (7 to 10,000,000 IU/mL). Liver stiffness measurement by transient elastography showed a median of 6.00 kPa (IQR 4.83–7.90). Significant moderate positive correlations were observed between liver stiffness and age ($p=0.377$, $p<0.001$) as well as between liver stiffness and AST ($p=0.320$, $p=0.004$) (Figure 1).

Most patients with CHB were receiving nucleos(t)ide analogue therapy (55/81; 67.9%); while none were treated with interferon. Patients on nucleos(t)ide analogues were significantly older than untreated patients (47 vs 40.5 years, $p=0.032$). ALT levels were lower among treated patients (29 vs 42 U/L) with borderline statistical significance ($p=0.050$).

Conclusions: This pilot study of adults with CHB at the tertiary referral centre demonstrated an HBeAg positivity rate of 9.9% and an anti-HDV prevalence of 4.2%. These findings highlight the importance of routine HDV screening in CHB patients and underscore the need for larger studies to better characterize the epidemiology and clinical impact of HBV/HDV coinfection in Lithuania.



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Early Versus Late Onset Avascular Necrosis of the Femoral Head in People Living with HIV: Distinct Clinical Profiles from a 15-Patient Cohort

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Background: Avascular necrosis of the femoral head (AVNF) is a rare, but life-altering complication in people living with HIV (PLWH) associated with chronic pain and disability that highly affects the quality of life. PLWH have a higher risk of developing AVNF than the general population. Given the progress of modern medicine, the chances of being diagnosed with AVNF have increased along with the life expectancy of PLWH.

There are well-known risk factors associated with the onset of AVNF such as trauma, chronic corticosteroid use, smoking and alcohol abuse, prolonged Protease Inhibitor (PI) exposure, dyslipidemia, as well as the HIV-infection itself. This study compares the clinical and biological characteristics of early versus late onset AVNF in HIV-infected patients.

Material and Methods: We conducted a retrospective study of 15 PLWH diagnosed with AVNF at the National Institute of Infectious Diseases "Prof. Dr. Matei Bals" in Bucharest, Romania, between 2015 and 2025. Inclusion criteria required a confirmed diagnosis of both HIV infection and AVNF and available data regarding demographics, HIV-related parameters, transmission route, ART exposure and adherence, lipid profiles, corticosteroid use and time from HIV diagnosis to AVNF development.

Results: The cohort was 80% male (12/15), mean age 37 (range 27-58), with bilateral AVNF in 47% (7/15). The overall median HIV to AVNF diagnosis interval was 11 years (range 1-17).

Early AVNF (33%, 5/15): Predominantly intravenous drug users (IVDU) (80%, 4/5), with poor adherence and minimal PI exposure (<12 months). Methadone maintenance was present in all IVDU and, across the cohort, methadone was associated with earlier AVNF (median 5 vs 12 years without methadone). Viral load at AVNF diagnosis was high (mean \approx 83,000 copies/mL). Lipids showed low HDL (\approx 32 mg/dL) with low/normal LDL, a pattern consistent with HCV coinfection in the whole group. Corticosteroids were used in two IVDU for secondary thrombocytopenia, not opportunistic infections. Based on these findings, early onset AVNF seems to be linked to uncontrolled HIV, vascular fragility, methadone-related low bone density, and repeated vascular trauma from injection, rather than ART toxicity. Late AVNF (67%, 10/15): Patients who acquired HIV through sexual transmission or those from the Romanian pediatric cohort, with suppressed viral loads (e.g., \sim 25 copies/mL in sexual transmission), prolonged PI exposure (>36 months), and atherogenic dyslipidemia. Corticosteroids were common. Among patients with sexually transmitted HIV, corticosteroid use was related to degenerative or inflammatory joint diseases, such as ankylosing spondylitis or coxarthrosis, whereas among cohort patients, corticosteroids were primarily administered for the management of opportunistic infections. This profile supports a metabolic pathway—long-term PI-related vascular injury and corticosteroid use—leading to late onset (median 12 years).

Conclusion: Two distinct patterns of AVNF were identified: early AVNF in IV drug users on methadone maintenance, high viral loads, hepatitis coinfection, low HDL, and minimal PI exposure, and late AVNF in patients with long-term PI use, suppressed viral loads, dyslipidemia and more frequent corticosteroid use.



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From Structure to Function: vp17 Variants as Pathogenic Drivers of B-Cell Clonogenicity in HIV-1

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Background: The HIV-1 matrix protein p17, consisting of 132 amino acids, exhibits a complex structural architecture defined by five major α -helices and three β -strands. It is organized between the N-terminal domain, involved in membrane anchoring and structural stability, and the C-terminal domain, the primary site of insertions and mutations with functional impact. Acquired mutations give rise to molecular variants (vp17s), frequently detected in HIV-1-positive patients with non-Hodgkin lymphoma (NHL), which display clonogenic effects on B cells.

Objectives: This study investigates the molecular mechanisms underlying the clonogenic activity of vp17 variants, highlighting the structural modifications that distinguish them from the reference p17 (refp17), which lacks clonogenic activity.

Material and Method: A comprehensive literature search was conducted in PubMed using the keywords "HIV-1 matrix protein," "vp17 variants," "AT20 loop," "B-cell clonogenic activity," and "lymphomagenesis." The search was limited to English-language publications from the past 15 years and further expanded through reference snowballing to ensure the inclusion of all relevant studies.

Results: Vp17 variants contribute to lymphomagenesis compared to refp17 through conformational alterations that profoundly modify their biological behavior. The most frequent mutations occur in the C-terminal region, including the Ala-Ala insertion at positions 117–118 or more complex insertions at positions 125–126. These modifications destabilize the hydrophobic core (HC), resulting in the partial misfolding of the protein and increased flexibility of the N-terminal AT20 loop (residues 15–30). Within this loop, residues Trp16 and Tyr29 normally anchor the domain within the HC, whereas destabilization disengages them and exposes the functional epitope, which is enriched in positively charged residues (Arg15, Lys18, Arg20). Once accessible, this AT20 epitope acquires pathogenic activity by binding to protease-activated receptor-1 (PAR-1), leading to EGFR transactivation and activation of the PI3K/Akt pathway, thereby enhancing B-cell proliferation and clonogenicity. In addition, AT20 exposure enables vp17s to act on CXCR1/2 receptors in endothelial cells, supporting angiogenesis and lymphangiogenesis and ultimately favoring lymphoma progression.

Conclusions: Vp17 variants act as soluble pathogenic factors that promote B-cell clonogenicity and contribute to lymphomagenesis in HIV-positive individuals. Their oncogenic activity identifies vp17 as a potential diagnostic biomarker and a promising target for small-molecule inhibitors, vaccines, and antibody-based therapies.

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COVID-19 Vaccine Immunogenicity among PLWH in Canada: Effect on HIV Reservoir and Markers of HIV Persistence (CIHR Canadian HIV Trials Network 328)

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Background: In a Canadian multi-centre prospective, observational cohort of people with HIV (PWH) receiving >2 COVID-19 vaccinations, we examined impact of COVID-19 vaccination on immunogenicity and durability. In this sub-study, we examined impact of repeated COVID-19 vaccination on HIV reservoir dynamics and inflammatory mediators relevant to immune

activation, B cell function and gut epithelial integrity longitudinally.

Methods: Data was collected between August 2021-April 2022. Participants had to have specimens available >2 time points to facilitate within-person change comparisons. Time points included V1-Screening/Baseline (before dose #1); V4 - 6 months after 2nd dose, and VB-1: 4 weeks after 3rd dose. Participants also had to remain naïve to natural COVID-19 infection at each time point. Total HIV DNA and cell-associated HIV RNA(LTR-gag) were quantified using real time PCR/qPCR. Plasma levels of A Proliferation-Inducing Ligand(APRIL), Soluble Tumor Necrosis Factor Receptor II(STNF sTNF-RII), and Regenerating islet-derived protein- α (REG3A) were assessed via ELISA to evaluate immune activation and microbial translocation.

Results: Fourteen participants (71% male) were included. Mean age was 53.4 \pm 15.1 years; half were >55 years of age. Average CD4 count was 608.4 \pm 251.3 cells/ μ L, and 35.7% had CD4 counts <500 cells/ μ L. The most common comorbidities were obesity(36%), hypertension(29%), and dyslipidemia(21%). All had suppressed viral load on ART. HIV DNA levels remained stable over time, and no consistent trend in HIV RNA transcriptional activity was observed post-vaccination. Soluble mediators did not significantly change between baseline and follow-up visits. Subgroup analysis suggested that individuals with CD4<500 cells/mm³ had mild increases in APRIL and REG3A, while those with fewer comorbidities showed more dynamic patterns of immune and inflammatory mediators.

Conclusion: Repeated COVID-19 vaccination did not significantly alter HIV reservoir size, transcriptional activity of HIV, or soluble marker levels in PLWH at the time points examined. Our results provide additional safety reassurance with regards to repeated vaccination in this population.



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Intersecting Epidemics: Viral Hepatitis, HIV, and Hidden Liver Cancer Burden in Eswatini, Opportunities for Integrated Prevention and Control

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Background: Eswatini has one of the highest adult HIV prevalence rates globally (27%). Viral hepatitis remains underdiagnosed due to limited surveillance and comprehensive data, particularly for the hepatitis B virus (HBV). The convergence of HIV and HBV significantly increases the risk of hepatocellular carcinoma (HCC). However, the true burden of liver cancer in Eswatini is poorly understood and likely underestimated.

Methods: We analyzed national mortality data from 2016–2020 for HIV and viral hepatitis, disaggregated by sex, and compared these with 2022 GLOBOCAN liver cancer incidence and mortality estimates. Patterns of mortality and incidence were assessed to identify gaps and opportunities for integrated prevention and control strategies.

Results: Annual deaths attributed to viral hepatitis ranged from 17 to 26, with slightly higher rates among males. GLOBOCAN 2022 estimated liver cancer incidence and mortality at 4 per 100,000 population, with higher rates among males (5.9/100,000) compared to females (2.7/100,000). The combination of high HIV prevalence, ongoing viral hepatitis-related mortality, and inadequate HBV surveillance suggests that a substantial proportion of liver cancer cases remain undiagnosed and unreported. These overlapping epidemics indicate a compounded risk for HCC, particularly among individuals with HIV/HBV co-infection.

Conclusion: The overlapping epidemics of HIV, viral hepatitis, and liver cancer in Eswatini highlight the urgent need for integrated prevention and control measures. Leveraging existing HIV programs to expand HBV screening, vaccination, and early liver cancer detection could significantly reduce morbidity and mortality. Strengthening surveillance systems, improving HBV data collection, and fostering cross-program collaboration are essential to uncover the hidden liver cancer burden and improve population health outcomes.



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Unexpected Localization of Tuberculosis in a HIV-Infected Late Presenter Patient

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Background: Liver and lymph node abscesses are a rare manifestation of extrapulmonary tuberculosis.

Case description: We present the case of a 52-year-old male patient who had a 2-month history of fever (maximum 39°C), muscle aches and weight loss. He was a heavy smoker and known for essential low blood pressure and rheumatic fever with valvular involvement for which he underwent aortic valve replacement. At admission, he was feverish (37.8°C), underweight (BMI=16.98 kg/m²), with oral candidiasis, low blood pressure (89/54 mmHg), and diastolic murmur in the mitral focus, with a metallic click. Blood work showed lymphocytopenia (0.94x10⁹ cells/L), anemia, and an increased C-reactive protein (105 mg/L). Blood cultures were negative, and *Candida albicans* was isolated from the oral swab. He was started on vancomycin, gentamycin, and fluconazole. HIV testing was positive. HIV viral load was 220000 copies/ml and the CD4 count was 47 cells/mm³. Chest X-ray was normal. Full-body CT scan was performed showing a multiloculated abscess in the right psoas muscle with dimensions of 55/50 mm, with an adjacent adenopathy, small liver abscesses and mediastinal adenopathies. Under the prescribed treatment the patient remained feverish and on the 7th day of treatment developed a productive cough. PCR testing of sputum was positive for Rifampin-sensitive *Mycobacterium tuberculosis*. Anti-tuberculous regimen with Rifampin, Isoniazid, Pyrazinamide and Ethambutol was started. The abdominal abscess was surgically removed and all tests (PCR, culture, histopathological examination) of the sample confirmed the diagnosis of lymphatic tuberculosis. The patient became afebrile on the second day of treatment. After 2 weeks of anti-tuberculous treatment antiretrovirals (tenofovir

disoproxil fumarate, emtricitabine, dolutegravir) were associated. Five months later the HIV viral load was below 20 copies/ml and the CD4 cell count was 218/mm³. After 7 months of treatment, remission of the tuberculous liver abscesses was observed using a thoracic-abdominal-pelvic CT scan.

Conclusions: The presented case describes an HIV-infected patient with both pulmonary and extrapulmonary tuberculosis, with no suggestive respiratory symptoms and pulmonary radiologic lesions. He developed a very rare form of extrapulmonary tuberculosis – tuberculous liver abscess.



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Multifocal Urogenital Tuberculosis in a Person Living with HIV Under Effective Immune Control - Case Report

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Background: Genitourinary tuberculosis is the third most common form of extrapulmonary TB in the general population. However, extrapulmonary disease overall occurs more frequently in immunocompromised individuals, particularly those with HIV or diabetes. Globally, HIV increases the risk of active TB nearly 30-fold, and tuberculosis accounts for one quarter of HIV-related deaths. These epidemiologic patterns highlight the particular challenges in managing genitourinary TB, where prolonged multidrug therapy is often complicated by toxicity and drug-drug interactions.

Material and Methods: We present the case of a 53-year-old man living with HIV on antiretroviral therapy (TDF/FTC + DTG), with good adherence and sustained viro-immunological control (undetectable viral load, CD4 count 671/ μ L), who was admitted to our department with a 5-month history of low-grade fever, dysuria, and persistent lower abdominal pain. Leukocyturia persisted without clinical improvement even after several courses of empirical antibiotics and numerous outpatient urine cultures reported negative results.

Results: A CT scan of the abdomen and pelvis revealed a hyperdense cortical cyst in the left kidney and an ill-defined cortico-medullary nodular lesion in the lower pole of the left kidney with ipsilateral calyceal extension. An abdominal and pelvic MRI was performed for better characterization, revealing two intraparenchymal lesions of the left kidney, two protruding cortical cysts of different contents, and a cyst-like lesion with heterogeneous fluid and sediment. There was marked thickening and enhancement of the inferior calyceal group, renal pelvis, and proximal ureter, with moderate dilatation and parietal

enhancement along the entire ureter, including its terminal portion. The urinary bladder had also circumferential wall thickening. PCR for *Mycobacterium tuberculosis* from urine was positive and testing showed no resistance to rifampicin. Concomitant pulmonary tuberculosis was excluded as the chest X-ray revealed no pulmonary lesions.

The final diagnosis was multifocal urogenital tuberculosis. The patient was treated with standard antituberculous therapy for six months, with adjustment of antiretroviral treatment by doubling the dose of dolutegravir due to concomitant rifampicin administration. The global outcome course was favourable, with clinical improvement and conversion to negative urine PCR for *Mycobacterium tuberculosis*.

Conclusions: This case highlights the paradox that, even under sustained viro-immunological control, a person living with HIV may develop multifocal urogenital tuberculosis. Clinicians should maintain a high index of suspicion and apply a rigorous diagnostic approach when faced with persistent sterile pyuria or atypical renal lesions, since only a vigilant diagnostic strategy can secure early recognition and treatment and prevent irreversible kidney damage.



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Discrimination/Stigma Work Place

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The story of a patient with HIV/AIDS

The first steps in life: He was born in 1990 in a maternity hospital in Bucharest, after a year I arrived at the Prof. Dr. Matei Bals Institute of Infectious Diseases in Bucharest, where I was diagnosed with HIV/AIDS. In 1992 I ended up in a Non-Governmental Organization in the UK where they established the first family time homes for abandoned children in Romania.

For more than 3 years since I was diagnosed with HIV/AIDS infection, I have gone through many challenges that made me stronger and more attentive to those around me
Life with HIV is a continuous fight with yourself and you can fight in life if you want to live the way you want.

Discrimination/Stigma: - In Romania, people with HIV/AIDS are discriminated against/stigmatized due to this chronic condition.

- HIV is still a problem at national level, where patients cannot disclose the diagnosis in certain public institutions, as well as in dental and gynecological offices.

-For many of the patients in the cohort, the disclosure of the diagnosis has a negative impact among the circle of friends and life partners, and especially in schools and high schools, where after learning the diagnosis, physical and verbal violence is a point sensitive.

- One in two Romanians is afraid to go out to dinner with a person living with HIV. Almost 40% of Romanians say that they would be afraid to let their child interact with a person who has HIV, at school or kindergarten. Only one out of two Romanians (48%) knows what the concept of "undetectable patient" means in the case of those living with HIV, namely a person under long-term treatment who does not transmit the virus further.

- The main cause of stigmatization of people living with HIV remains the lack of information. More than half of the respondents (51.9%) are not

familiar with the concept of "undetectable patient" in HIV treatment. In other words, Romanians do not know that HIV treatment, taken correctly, brings the virus to an undetectable level, which means that the carrier will no longer transmit it to other people. Worse, 35% of respondents believe that the term refers to a person who has never had an HIV test.

- Discrimination/Stigmatization at the Workplace of a patient with HIV in Romania.

Fear can lead to negative behaviors towards you, especially when people do not have correct information about HIV/AIDS. For example, in Romania, the most recent study started by IRES and CNCD in 2019 with the title "Discrimination and hate speech in Romania" shows that identity reporting with different characteristics is mainly done according to health status (61%).58% of Romanians are afraid of everything that is different and show a high degree of mistrust towards people living with HIV/AIDS. The social distance scale, represented in the study mentioned above, shows that 27% of Romanians do not accept a person living with HIV/AIDS as their relative, and 23% do not accept them in their network.

