Speaker presentations of the 2018 International Symposium on HIV and Emerging Infectious Diseases (ISHEID)

S1

From HIV to global health

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At least 30 million people die prematurely (half of them before the age of 5) in developing countries for lack of adequate access to basic health care. They die for causes that are very often preventable or treatable. Despite the convergence on the concept of health as a human right, there still exist intolerable global inequalities in accessing health and health services and in terms of life expectancy and morbidity and mortality from communicable and non-communicable diseases. The persistence of inequalities in terms of health – not only between rich and poor countries, but also between different regions in the same country – is also a contradiction to science, given the growing geographic interdependence of the biomedical causes and of the social determinants of health and diseases.

The causes of poor health for millions globally are rooted in political, social and economic injustices. Poverty is both a cause and a consequence of poor health. Marginalized groups and vulnerable individuals are often worst affected, deprived of the information, money or access to health services that would help them prevent and treat disease.

Global health is the health of populations in a global context. It is an area for study, research, and action that places a priority on improving health and achieving equity in health for all people worldwide, transcending the perspectives and concerns of individual nations. It emphasizes transnational health issues, determinants, and solutions; involves many disciplines within and beyond the Health Sciences; is a synthesis of population-based prevention with individual-level clinical care; with specific attention to the poor, the marginalized, the underserved.

The way the HIV pandemic has been addressed, despite being still an unfinished job, may be a model to fight wider health inequalities. Indeed, HIV/AIDS drew together – towards the common objective of fighting a major health inequality – scientists, and clinicians, governments and the UN, visionary politicians and economists, international organizations, pharmaceutical industry, both proprietary and generics, NGOs and faith based-organizations and patient organizations. It recognized the supranational character of problems of disease and their amelioration, and the fact that no individual country can adequately address diseases in the face of the movement of people, trade, microbes, and risks. It mobilized innovative drug production, pricing and procurement, both from generic and proprietary manufacturers. It recognized that people affected by disease have a crucial role in the discovery and advocacy of new modes of treatment and prevention and their equitable access. It based the action on ethical and moral values that recognize that equity and rights are central to the larger goals of preventing and treating diseases worldwide.

S2

Total HIV DNA as guidance for simplification strategies

Sofie Rutsaert

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Although a triple therapy is the recommended initial treatment for HIV-patients, therapy simplification by reducing the number of drugs is being explored. Fewer drugs can reduce cost, avoid drug-drug interactions, improve tolerability and reduce toxicity for a lifelong treatment. The efficacy of mono and dual therapy has been explored in numerous clinical trials and the applicability depends on the individual patient and regimen. When a simplified regimen is applicable, total HIV DNA which reflects the number of infected cells in treated patients can aid in selecting eligible patients. A significant higher level of HIV DNA is observed in patients who fail virologically while on a simplified regimen, when compared to patients who maintained an undetectable viral load. This has been observed in different regimens (DRV/r monotherapy, RAL+ETR.) and indicates the validity of total HIV DNA in guiding the treatment strategies. However, to be clinical useful, this observation will have to be confirmed in a long-term and in other regimens, such as DTG/3TC or DTG/RPV dual therapy.

S3

A Platform for the Integrated Control of Arbovirosis in CATalonia (PICAT): Mosquito Alert 2.0

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Traditional methods for tracking disease-carrying mosquitoes are hitting budget constraints as the scales over which they must be implemented grow exponentially. Citizen science offers a set of innovative tools for public health management, allowing sustained and flexible data collection while facilitating public participation in problem solving. There is increasing evidence that combining citizen scientist data with other sources of information significantly improves our knowledge in a given area. In particular, once we adjust for sampling bias, vector data obtained through the Mosquito Alert citizen science program has almost the same quality and predictive power as the one obtained from traditional surveillance. We are now further integrating vector data with epidemiological and social relevant data into a digital platform to augment the information already available from public health sources and provide risk models and key information to public health authorities at near real-time. The scientific exploitation of citizen science programs and big data solutions, should effectively help to reduce the presence of targeted mosquitoes and minimize current health threats.

S4

Climate change, socio-political changes and emerging pandemics

Jean-Paul Gonzalez

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Hippocrates, in his 'Treaty of Airs, Waters and Places', already shows us the links that exist between environment and health. Indeed, many communicable diseases are known to be climate-dependent (e.g. vector borne diseases; seasonal flu; meningoencephalitis), also, degenerative diseases can be under the influence of climatic factors (e.g. neurodegenerative diseases; rheumatic diseases). Nowadays, greenhouse gas emissions on health creates a scenario of infectious diseases resurgence as one of the main factors of morbidity and mortality in the World. Following up on a 'One Health' approach, some exemplary epidemic events will be presented that provide the necessary fundamentals for the understanding of climate change, extreme climatic events, their impact on Health and, how to be prepared and respond.

S5

New antivirals for hepatitis B

Vicente Soriano

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While new therapies for chronic hepatitis C provide remarkable cure rates, curative therapies against hepatitis B virus (HBV) infection remain elusive.

Current treatments against hepatitis B with nucleos(t)ides entecavir or tenofovir used orally provide sustained suppression of HBV replication and clinical benefit in most HBsAg+ people. However, HBV rebound generally occurs upon drug discontinuation due to persistence of genomic HBV reservoirs as episomic cccDNA and chromosomic integrated HBV-DNA.

New drugs that target distinct steps of the HBV life cycle are been developed, including inhibitors of viral entry, new polymerase inhibitors, capsid and assembly inhibitors, virus release blockers, and disruptors of cccDNA formation and transcription.

The achievement of a 'functional cure' for chronic HBV infection, with sustained HBsAg clearance and undetectable viremia once medications are stopped, represents the next step in the pace towards HBV elimination.

S6

The emergence of NASH issues after cure of hepatitis C

Lawrence Serfaty

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Non-alcoholic fatty liver disease (NAFLD) is the most common cause of chronic liver disease with an estimated prevalence worldwide ranging from 25% to 45%, concomitantly with the epidemic of obesity, type 2 diabetes and metabolic syndrome. While pure liver steatosis is considered benign with low risk of progression to more severe liver disease, approximately 20% of NAFLD patients have histologic signs of necroinflammation with or without fibrosis, indicating nonalcoholic steatohepatitis (NASH), and are at risk of developing cirrhosis, end-stage liver failure and hepatocellular carcinoma. Out of liver-related complications, it has been suggested that NAFLD may promote cardiovascular disease, maligancy and chronic kidney disease.

The persistence of comorbidities such as obesity, type 2 diabetes and NAFLD, after the cure of HCV infection may explain the progression of liver disease in some patients. In the French Cirvir cohort of HCV cirrhotic patients, the presence of metabolic syndrome was associated with a significant increase in the incidence of hepatocellular carcinoma in SVR patients. In this setting, comorbidities should be managed once HCV infection is cured. Lifestyle interventions, control or treatment of diabetes should be encouraged. In case of persistent fibrosis, new molecules targeting NASH and/or fibrosis should be evaluated.

S7

Lyme disease: where is the controversy?

Christian Perronne

Raymond Poincaré Hopsital, Garches, France

Lyme disease is one of the most important controversy in medicine history. Despite its previous description in Europe at the end of the 19th century and at the beginning of the 20th century, it has been officially described in the USA in the early seventies. A small group of experts from the Infectious Diseases Society of America (IDSA) described the disease on expert opinion basis and not on scientific data. They declared and published that the disease was rare, easily diagnosed with very efficient serologic tests, easily cured with 2 or 3 weeks of antibiotic treatment, and that a chronic form of the disease did not exist.

However, the medical literature, including articles in major journals, is rich in publications showing that the causative agent, *Borrelia burgdorferi,* could be isolated by culture or PCR from seronegative patients and providing evidence that *Borrelia sp.* can persist in blood and tissues despite several weeks or months of antibiotic treatment. As emphasized by the ECDC in April 2016, Lyme serology is quite impossible to calibrate properly. The cause is the fact that, in absence of a diagnostic gold standard, it is impossible to define for sure populations of patients or controls. A meta-analysis published at the end of 2016 showed that the sensitivity of Lyme serology was less than 60%.

Moreover, serologic tests only exist for one strain of *Borrelia* in North America and 3 strains in Europe. There is no test available for the numerous *Borrelia sp.* found in ticks and already isolated from patients. We know from publications that patients suspected to have a chronic Lyme disease may harbor other bacteria such as *Anaplasma, Bartonella* (including strains previously unknown in humans), *Ehrlichia, Neoerlichia, Rickettsia, Coxiella, Francisella,* etc. They can also harbor parasites such as *Babesia sp*. Some labs, including veterinary labs, have developed promising PCR methods.

The consequence of the lack of reliable diagnostic tests in routine for Lyme and co-infections is the suffering and the wandering of millions of patients in the world, rejected by the medical community and often ending in psychiatry wards. Not a single controlled randomized study has evaluated the efficacy of prolonged anti-infectious treatment (longer than 3 months) on the chronic form of the disease. Despite the important underestimation of the incidence measured on serology, the official incidence of the disease is rising in many countries in America and Europe in huge proportions (such as 10 fold increase or more in a decade). Research funding is urgently needed to better manage this public health threatening infectious disease.

S8

HIV and lungs at the time of effective ART

Jean-Pierre Routy

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People living with HIV receiving ART are living longer and experiencing reduced AIDS-related events. However, increases in non-AIDS related conditions, such as certain cancers, have accompanied these therapeutic advances. Smoking, modified microbiota combined with immunosuppression increase the risk for lung cancer in this population.

Prevention and treatment remain a challenge due to life style issues, including marijuana usage and potential interactions with ART and anticancer therapies, to comorbidities.

Lung cancers express higher PD-L1 levels with increased immune infiltration, supporting participation in clinical trials assessing immune checkpoint inhibitors. Furthermore, these new therapies with checkpoint inhibitors may also contribute to reduce HIV reservoir, paving the way for HIV eradication.

S9

New biomarkers of latency

Christina Psomas

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The 'Holy Grail' of the HIV world is to identify a marker that could characterize latent cells. Indeed, latently infected long-lived memory CD4+ T cells are the major obstacle in order to achieve a sterilizing cure. They not only remain invisible to the immune system, but are also unattainable by both antiretroviral therapy and cure approaches because of lack of targeting specificity of 'shock and kill' strategies involving reactivation of the dormant virus. In a recent Nature article, Descours et al. (Nature 2018; 543: 564–567) reported that CD32a, the low-affinity receptor for the immunoglobulin G Fc fragment may be a cell surface signature of CD4+ T cells harbouring latent HIV genomes. Since then, the relationship between CD32a expression and HIV persistence has been strongly debated by other groups. Will this biomarker help us address the mystery surrounding in vivo latent reservoirs and develop a cure-focused HIV diagnostic in the near future?

S10

Immunotherapies and immune check-points

Jean-Philippe Spano

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A very fast emerging new therapeutic approach in Oncology remains currently the immunotherapy that has really marked a new revolution over the past years in patient cancer care.

For a very large spectrum of malignancies, the use of PD-1 or PDL-1 and/or CTL-4 immune-checkpoint-inhibitor antibody (ICI) that restores antitumor immunity by disrupting PD-1/PDL-1 or CTL-4-mediated signaling has demonstrated a real significant interest in terms of efficacy compared with conventional chemotherapy but also a significant toxicity profile. Regarding the results of several phase 3 showing a significant impact upon overall survival compared with conventional chemotherapy, some ICI (ipilimumab, nivolumab, pembrolizumab, atezolizumab, darvelumab) has already got FDA and/or EMA approval providing new standard of care for some cancer patients. PD-1 receptor for instance, which is expressed on activated T cells, in link with ligands PDL-1 and PDL-2 expressed in tumor cells, remains the cornerstone for the rational for the development of such drugs. For sure, like other antitumor therapies, ICI can cause some sides effects and for the majority of them we have improved in their understanding and some recommendations have already been published to take care of them. Moreover, a new strategy in immunotherapy field has also recently emerged: the CAR T-cells. In HIV setting, cancer remains the leading cause of morbidity and mortality. PD-1 expression on HIV-specific T cells is associated with T cell exhaustion and some preclinical studies have suggested that blocking the PD-1/PDL-1 axis with monoclonal antibodies would be of highest interest during HIV associated lymphoma and may be other cancers. As HIV infected patients are generally excluded from the clinical trials in oncology, we need some data about tolerance and efficacy of using ICI in HIV infected patients with cancer.

S11

HPV vaccination: use in prevention and in cure

Deborah Konopnicki

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Human papillomaviruses (HPV) are responsible for the development of condyloma and cancer in the ano-genital and oropharyngal areas. These lesions are more frequent and more difficult to treat in HIV-positive persons. Preventive vaccines against HPV are available since a decade and their use in primary and secondary prophylaxis should be proposed to HIV-positive patients. Issues on vaccines schedules, costs and HPV genotypes coverage will be presented. Meanwhile, other therapeutical vaccines are currently under development and phase II studies will be discussed.

S12

Cohorts

Caroline Sabin

Royal Free Campus, London, UK

Cohort studies analyze a group of individuals over time until the development of some events. Even if this study approach is often used to describe the association between exposure to one or more factors and the risk of the event occurring, the interpretation of results from cohort studies is often limited by the presence of one or more biases.

For this reason, randomized controlled trials are believed to provide the most solid evidence when determining causal associations. Nevertheless, with due care in this study approach, the impact of some of these biases cannot be reduced.

S13

The future of digital games for HIV prevention and care

Lynn Fiellin

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The purpose of this presentation is to share two digital games that have been developed and evaluated by the play2PREVENT Lab at Yale that focus on risk reduction and HIV prevention and HIV testing and counseling. The first game, playForward: Elm City Stories (playForward), is a 2-D graphic novel style interactive videogame that focuses on adolescents acquiring and practicing skills to reduce risk behaviors and gain knowledge and healthier attitudes and intentions with the ultimate goal of HIV prevention. The impact of PlayForward on at-risk adolescents was recently rigorously evaluated through a full-scale randomized controlled trial and demonstrated a significant and persistent positive effect on behavioral antecedents/health outcomes that are critical for HIV prevention. A follow-up game, playForward: Test! was adapted from the original game to have a greater focus on HIV testing and counseling. This game has been pilot-tested and is undergoing further expansion and then will be evaluated through an RCT.

S14

PrEP in Europe: where are we?

Rosalind Coleman

Joint United Nations Program on HIV/AIDS, Geneva, Switzerland

The picture of PrEP access in Europe is highly diverse and rapidly changing. The rising number of new infections in different populations across the region demands a fresh HIV prevention approach that includes the focussed and appropriate use of PrEP. This talk will cover various national programmes and other ongoing PrEP projects; estimated numbers of people on PrEP and gaps in these data; costing and payment options; and the rise of buyers' clubs and other PrEP activism.

The various stumbling blocks to PrEP, such as the possible rise of other sexually transmitted infections, the perceived competition for resources with HIV treatment and the concerns about augmentation of antiretroviral resistance will be addressed with the intention of encouraging discussion.

The risks associated with non-regulated PrEP use strengthens the call for the establishment of national programmes. There is a choice of PrEP medicines available that can help to reduce costs along with pointers towards best service delivery practice that can be taken from existing PrEP programmes.

S15

Cost effectiveness of PrEP in Europe

Brooke Nichols

Johannesburg, South Africa

Over the last two years, mathematical models and economic evaluations have demonstrated the cost-effectiveness of PrEP use in several countries across Europe, particularly for men who have sex with men (MSM) and injection drug users (IDUs). Key determinants of the cost-effectiveness of PrEP are 1) its selective use: prioritization to those people at highest risk of HIV, and 2) the cost of PrEP. In cases where the cost of PrEP was strongly reduced, PrEP was even shown to be cost-saving or, in other words, costs less to prevent one HIV infection than the lifetime healthcare costs of that infection.

This body of work has contributed, in part, to the approval and financial reimbursement of PrEP in several countries and will continue to aid decision makers across Europe in deciding whether to provide and reimburse PrEP.

Oral presentations of the 2018 International Symposium on HIV and Emerging Infectious Diseases (ISHEID)

O1

Detection of emerging avian influenza A H7N9 virus based on a rapid and sensitive intensity-modulated SPR biosensor

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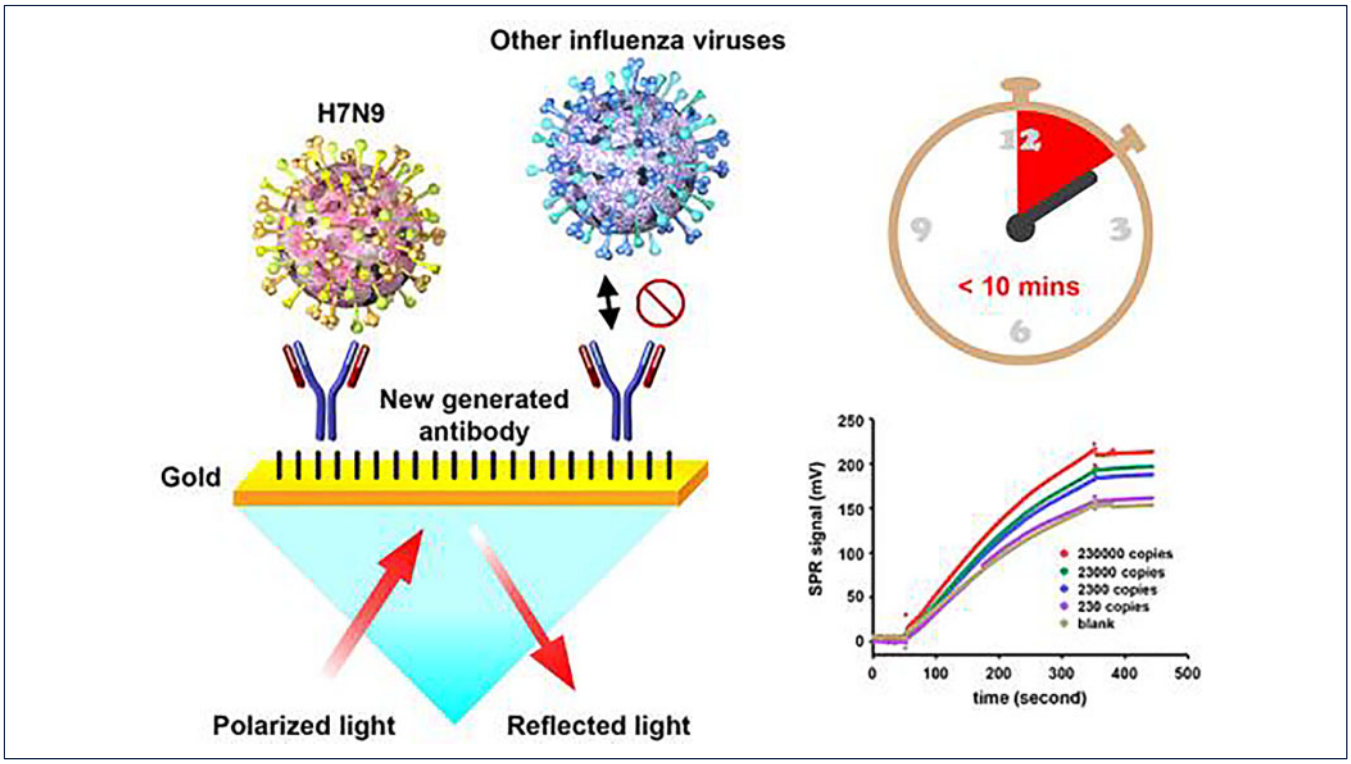
Introduction: In 2013, a new reassortant avian influenza A H7N9 virus emerged in China. PCR-free detection methods have presently attracted tremendous attention because they exhibit rapid and highly sensitive detection of clinically relevant viruses. We therefore propose a simple strategy for rapidly and sensitively detecting the H7N9 virus using an intensity-modulated surface plasmon resonance (IM-SPR) biosensor.

Materials and methods: A novel monoclonal antibody (mAb) was generated via immunization of trimeric recombinant hemagglutinin of A/Shanghai/02/2013(H7N9) strain. H7N9 vaccine strain was produced using reverse-genetics. IM-SPR biosensor was biult up with the bare Ag/Au (35/10 nm) chips captured with H7-mAb, the relatively inexpensive devices, a current-modulated diode laser and a data acquisition (DAQ) and integrated with fast Fourier transform (FFT) analysis.

Results: The novel antibody exhibits significant specificity to recognize H7N9 virus compared with other clinical human influenza isolates ($p<0.01$). Experimentally, the detection limit of the proposed approach for H7N9 virus detection is estimated to be 144 copies/mL, which is a 20-fold increase in sensitivity compared with homemade target-captured ELISA using the identical antibody. For the measurement of mimic clinical specimens containing the H7N9 virus mixed with nasal mucosa from flu-like syndrome patients, the detection limit is calculated to be 402 copies/mL, which is better than conventional influenza detection assays; quantitative reverse transcription polymerase chain reaction (qRT-PCR) and rapid influenza diagnostic test (RIDT). Most importantly, the assay time took less than 10 minutes. (Picture 1)

Conclusions: Combined, the results of this study indicate that the proposed simple strategy demonstrates high sensitivity and time-saving in H7N9 virus detection and this assay has the potential to be used in applications and development of other emerging or re-emerging microbe detection platforms.



O2

Risk factors for multidrug-resistant tuberculosis patients in Casablanca-Settat, Morocco, 2012–2016

Soad Redwane

Ministry, Casablanca, Morocco

Introduction: Multidrug resistance tuberculosis (MDR-TB) is defined as resistance to isoniazid and rifampicin. In Morocco, the prevalence of MDR-TB is 1 % in new cases and around 8.7% in among the restatement cases. The aim of this study was to identify the risk factors for MDR-TB, in Casablanca-Settat region, Morocco.

Materials and methods: This was a case control (1 cases: 2 controls) study design. That have included patients notified as between January 1, 2012 and December 31, 2016 at the Center for the diagnosis of tuberculosis in the region. The cases are patients with pulmonary MDR-TB and the controls are patients with drug-sensitive tuberculosis treated, during the same period in the same center of care as the cases and declared cured at the end of treatment. In which the following factors were analyzed: socio-demographic and clinical characteristics, and MDR-TB patient contact. Data from MDR-TB cases and controls were analyzed using logistic regression model to identify risk factors of MDR-TB. For each factor, the association between the variables studied and MDR-TB was estimated by odds ratio (OR) with the 95% confidence interval. The analysis was performed using SPSS software version 24.0.

Results: One hundred sixty-eight cases and 336 controls were collected. A male predominance was noted in the two groups, the mean age was 37 years for the cases and 35 years for the controls. Multivariate analysis revealed that cases compared to controls were significantly more likely to have had a previous history of retreatment (OR=60.9) or relapse after antituberculosis treatment (OR=20.6) or a patient – contact with MDR-TB (OR=10.5) or a hookah smoker (OR=3.6) or have a low monthly income.

Conclusions: Our results emphasize that previous history of retreatment with first-line anti-tuberculosis drugs is the main risk factor regained, hence the interest of surveillance close and especially the application of the directly observed treatment, Short-Course (DOTS) strategy.

O3

Prevalence and incidence of hepatitis delta in patients with chronic hepatitis B in Spain

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Introduction: Hepatitis delta virus (HDV) infection causes the most aggressive form of chronic viral hepatitis. Given the defective nature of HDV, two major forms of acquiring hepatitis delta exist, one as HDV superinfection of hepatitis B chronic carriers and another as acute dual HBV and HDV coinfection. Most chronic hepatitis delta patients belong to the first category. In Western Europe, HDV spread during the 80s and 90s among injection drug users. Since then, new diagnoses of hepatitis delta have been rare and mostly recognized in immigrants from endemic countries.

Materials and methods: The incidence of HDV superinfection was examined in a large cohort of HBsAg+ patients established since year 2000 at a large tertiary outclinic in Northwestern Spain. Anti-HDV antibodies were tested every 5 years.

Results: During the study period, a total of 320 individuals were diagnosed as HBsAg. Overall, 68.4% were male; median 46-years old; 83.7% were native Spaniards; 7.8% were coinfected with HIV; and 6.3% were reactive for HCV-antibodies.

The most frequent HBV genotypes in HBV-DNA viremic patients were D (71.3%) and A (15.3%). HBeAg+ was present in 21.9%. Overall, tenofovir was prescribed to 36.3% of HBsAg+ patients and 45.9% had undetectable HBV-DNA at last control.

Ten patients (3.1%) had anti-HDV-Ab at first diagnosis. There were no further seroconversions for anti-HDV-Ab subsequently during a median follow-up of 11 years. Most anti-HDV+ patients were male, native Spaniards and were coinfected with HIV and HCV-Ab+. Interestingly, 2/3 women with delta hepatitis were foreigners, denied injection drug use, were younger than 40 years-old, and were negative for HCV and HIV.

Conclusions: The rate of chronic hepatitis delta is currently very low (<5%) among HBsAg+ carriers in Spain. Moreover, new HDV infections were not seen in 320 chronic HBV carriers since year 2000, following drastic declines in injection drug use.

O4

Sero-epidemiological study of adherence to vaccine and humoral response against hepatitis A virus in patients living with HIV-1

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Introduction: Hepatitis A virus (HAV) infection remains a health risk for many HIV-infected patients, especially men who have sex with men (MSM), due to increased rates of unprotected intercourse and unsafe sexual behavior. Thus, vaccination is recommended for all HIV-infected patients without anti-HAV antibodies. Besides, evaluation of response to immunization is also recommended. Despite recommendations, adherence to the immunization remains low.

Materials and methods: The present study is a retrospective review of HIV-infected patients followed-up at the Infectious Disease Unit of AHEPA University Hospital during 2005–2015. The study included 1,210 patients who underwent anti-HAV serology test. Adherence to immunization and seroconversion were also evaluated.

Results: The mean duration of HIV infection was 5.1 years. Among the total study population, 338 had IgG anti-HAV antibodies from a previous infection and 20 did not undergo measurement of anti-HAV antibodies. According to anti-HAV titers, 852 patients were eligible for immunization, but only 627 (73.6%) completed the vaccination schedule (two doses), while 203 patients were partially immunized (one dose). The lack of social insurance was an independent risk factor for non-compliance to vaccine ($p<0.0005$). Moreover, low educational status was also associated with poor compliance ($p<0.0005$). In multivariate logistic regression analysis, ethnicity ($p=0.027$) and CD4 T cell count ($p<0.001$) were independent predictors of adherence. After vaccination (two doses), 506 patients (81%) had adequate antibody response (>20IU/L), whereas 121 (19%) patients did not. Seroprotection was not affected by age, sex, HIV risk factor, disease stage, HAART, nadir or current CD4 cell count and viral load.

Conclusions: Vaccination against HAV was incomplete in HIV-infected patients. Low educational status and lack of social insurance contributed to poor adherence to vaccination, leading to suboptimal protection. Even after immunization, some patients still remain at high risk of HAV infection.

O5

Incidence and clinical characteristics of acute hepatitis A in a tertiary referral hospital in Madrid (2008–2017)

Alberto Díaz-De Santiago, Patricia A. Mills, Jorge Anel, Ignacio Morrás, Renato Crozzoli, Victor Moreno-Torres, Francisca Portero, Sara De La Fuente, Natalia Vicente, Alfonso Ángel-Moreno

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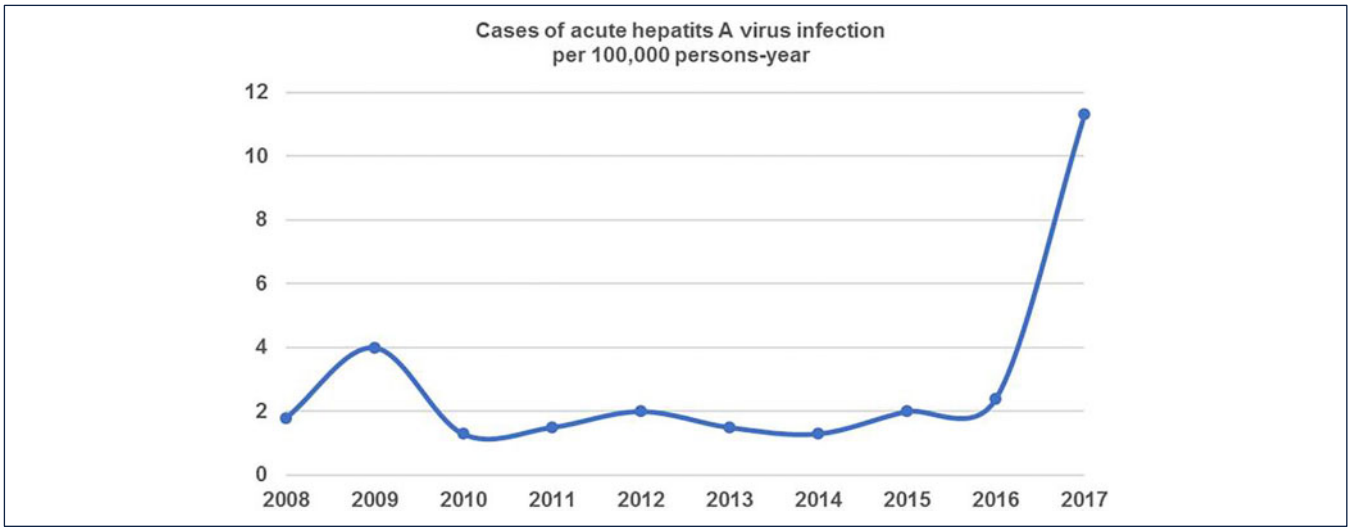
Introduction: The aim of this study was to investigate the clinical characteristics and changes in incidence of acute hepatitis A in our center during a recent outbreak in Madrid.

Materials and methods: Data of patients diagnosed with acute hepatitis A from 2008 to 2017 were collected from our hospital (which covers an area of 450,000 inhabitants) retrospectively. Their demographic and serological characteristics, and clinical outcomes were analyzed.

Results: A total of 132 patients (67% male, 86% Spanish) were included, with a median age of 37 years old. Incidence varies from 1.78 cases per 100,000 person-year in 2008 to 11.3 in 2017 (P<0,00001) (figure 1). 38.7% of total diagnosis referred to acute infections during 2017. 17% recognized risk factors for acquiring hepatitis A virus, of whom 41% remembered sexual risk patterns. 11.4% MSM, but there was no registry about sexual orientation in clinical records in 84% of study population. 2,8% were HIV-positive men on ART with suppressed viral load, and 7% suffered from diabetes mellitus. 5% had been previously vaccinated against hepatitis A virus (HAV). 38% were admitted to Hospital, without differences by sex, nationality, HIV status, or vaccination. The mean of the highest ALT level was 2,582 IU/L, AST 1785, total bilirubin 7.3 mg/Dl, ALP 286, GGT 313, and prothrombin activity 72%. Bilirubin reached highest levels 8 days after symptoms appeared (IQR 6-11). We observed co-infection with HAV in 13 patients: HBsAg was positive in 3%, 1.5% treponema RPR, 1.5% HPV, 0.75% anti-HCV, 0.75% EBV, and 0.75% HIV. 2.3% required ICU admission, 1.7% liver transplantation, and 1 patient died. The median duration of admission was 4 days (IQR 3-10). Median time for clinical resolution was 18 days, 22 days for hyperbilirubinemia, and 3 days for prothrombin activity.

Conclusions: Outbreak of acute hepatitis A virus infection was observed in 2017 with an increase of 6-fold in previous incidence. Hyperbilirubinemia should not delay discharge.



O6

Chemsex on PrEP: risk behaviours and STI incidence among PrEP patients using illicit substances

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Introduction: The growing practice of drug use during sex, known as chemsex, raises concerns that intoxication may lead to greater STI/HIV risk. Consequently, Pre-Exposure Prophylaxis (PrEP) is recommended for individuals engaging in chemsex. We aim to investigate associations between chemsex, risk behaviours and STI incidence among PrEP users.

Materials and methods: This retrospective study of the l'Actuel PrEP cohort includes men who have sex with men, ages≥18, who consulted for PrEP from 2011–2017. Baseline behavioural risk characteristics reflect activities during the year prior to PrEP including: number of partners and condom use. Among individuals with ≥12 months follow-up, the cumulative incidence of STIs (Chlamydia or Gonorrhea) and relative risk (RR) over 12 months after PrEP initiation were compared between chemsex and non-chemsex users.

Results: Among 1,881 patients who consulted for PrEP, 550 (29%) reported chemsex, 463 (25%) used marijuana and/or poppers, 332 (18%) reported alcohol consumption only, 536 (29%) reported no substance use. Individuals reporting chemsex used: GHB/GBL (n=310), Ecstasy (n=307), Cocaine (n=254), Cristal Meth (n=129) and Ketamine (n=102). The chemsex group exhibited increased risks when compared with non-chemsex group including more sexual partners (mean 34 vs 18, p<0.01) and a greater proportion reporting condomless insertive (62% vs 45%, p<0.01) or receptive anal sex (38% vs 27%, p<0.01). Chemsex users experienced higher 12-month cumulative STI risk (41% vs 32%), translating to a 48% increased STI risk (RR=1.48, 95%CI: 1.20–1.82).

Conclusions: This study demonstrates how PrEP reaches an already at-risk population with high levels of baseline drug consumption, which may contribute to increased STI risk on PrEP. Continued risk reduction counseling and combined prevention measures are needed to minimize potential harms associated with chemsex. Training for primary careproviders to increase awareness of chemsex risks is essential.

O7

HIV-1 sequences with more predicted glycans in acute infection were associated with the development of higher neutralization breadth

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Introduction: Glycans constitute a large portion of HIV-envelope (Env) and play a key role in HIV evasion from the host antibody response. To evaluate the relationship between glycans and host immunity to Env, we analyzed predicted N-linked glycosylations (PNGS) and neutralization breadth in HIV infected individuals.

Materials and methods: We examined 1,528 Env sequences (sampled at 1 week, 1 month and 6 months post-diagnosis) and neutralization data from 74 participants from Thailand and East Africa. Neutralization breadth was evaluated 2–3 years post-infection using a panel of 35 viruses: 16 broad neutralizers neutralized >70% of the panel while 12 non-broad neutralizers neutralized <35%.

Results: Sequences at 6 months after diagnosis (n=40) showed that the number of PNGS in Env did not change over time (p=0.91).

Participants were infected with CRF01_AE viruses in Thailand or subtype A1, C and A1/C/D recombinants in East Africa but neutralization breadth did not differ by subtype (p≥ 0.25).

Considering all time points, the mean number of PNGS was not significantly different between broad (29.2) and non-broad (27.8) neutralizers (p=0.11). Yet, there was a significant positive correlation between the mean number of PNGS and the neutralization breadth measured 2 years post-infection (r=0.64, p<0.01 with acute Env). When looking at the number of PNGS in the five variable loops of Env, this signal appeared mostly driven by PNGS in V4: r=0.41, p=0.05.

Conclusions: Similar to reports showing that glycan holes negatively affect the development of neutralization breadth, we found that Env with less PNGS led to narrower neutralization. These results highlight that PNGS counts in acute infection inversely associate with the neutralization breadth 2 years post-infection. Better characterizing the role of specific glycans is needed to clarify the relationship between the glycan shield and the development of a broadly-neutralizing response.

O8

Frequent CXCR4-tropism in newly diagnosed individuals from an HIV-1 F1 subtype cluster rapidly expanding among men who have sex in men in Spain

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Introduction: An HIV-1 F1 subtype cluster has recently expanded among men who have sex in men (MSM) in Spain, mostly in the Northwestern region of Galicia. This cluster is associated with higher viral loads, lower CD4+ cell counts at diagnosis, delayed virological response and poorer CD4+ cell recovery after initiation of antiretroviral (ARV) therapy. Here we examine coreceptor usage in viruses from the F1 cluster from newly diagnosed individuals.

Materials and methods: An HIV-1 envelope segment of 366 nt in the V3 region was amplified from RNA extracted from plasma from recently diagnosed (<1 year) individuals residing in 6 regions of Spain and sequenced. Coreceptor usage was predicted with Geno2pheno, using a false positive rate (FPR) cut-off of 10%. Maximum likelihood phylogenetic trees were constructed with PhyML, using the GTR+G+I evolutionary model, with assessment of node support by the approximate likelihood ratio (aLRT) test, using a Shimodaira-Hasegawa(SH)-like procedure. Nodes with ≥0.9 SH-like aLRT values were considered well supported.

Results: 62 viruses branched within the previously identified F1 cluster. 27 (43.5%) of them were predicted to be X4 or mixed/dual-tropic with Geno2pheno (using a 10% FPR cut-off), with 19 of these viruses belonging to a subcluster. Within this subcluster, all 15 viruses that did not branch within a subsubcluster (which comprised mostly CCR5-tropic viruses) were CXCR4-tropic.

Conclusions: Viruses from newly diagnosed individuals from an HIV-1 F1 subtype cluster rapidly expanding among MSM in Spain are frequently predicted to be CXCR4-tropic, with most CXCR4-tropicviruses branching within a subcluster. Further studies will be needed to determine whether CXCR4-tropism is associated with the poorer virological and immunological responses to ARV therapy reported for this cluster.

O9

High Incidence of sexually transmitted infections in HIV negative MSM patients: a real-life prospective cohort study

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Introduction: Men who have sex with men (MSM) who attend group-sex events often engage in risky sexual behaviors that contribute to the high human immunodeficiency virus (HIV) incidence and others sexual transmitted Infections (STI) among this population. The use of Pre-Exposure Prophylaxis (PrEP) for HIV raises concerns about STI incidence due to decreased condom use among MSM. This study examines the incidence of STI in HIV negative comparatively with HIV positive MSM patients, and whether PrEP has an incidence with STIs.

Materials and methods: This prospective MSM cohort study in risky sexual behaviors with over 12 months of follow-up before PrEP prescription and MSM individuals receiving PrEP was conducted from September 2016 to September 2017 at Hopital Europeen (Marseille, France). 523 MSM patients (403 HIV positive and 120 HIV negative) were studied. Among the 120 HIV negative patients: 86 were included in a PrEP program. Incidence of Chlamydia, Gonorrhoea, Mycoplasma, Syphilis and HCV checked every three months in three compartments (anal, urine, pharynx) over 12-months.

Results: Among the 86 HIV negative PrEP patients, 31 (36.0% [95%CI 26.0–47.1%]) were positive to STI; among the 34 HIV negative non-PrEP patients, 12 (35.3 % [19.8–53.5%]) were positive to STI. Thus, STI incidence between HIV negative PrEP and HIV negative non-PrEP patients was not significant: incidence rate ratio (IRR) 1.02 [0.60–1.74], p=0.93. PrEP users were at higher STI risk relative to HIV positive patients: 36.0% (31/86) vs. 18.4% (74/403) respectively, IRR 1.96 [1.39–2.78] p<.01.

Conclusions: Increased rates of STIs after initiation of PrEP may suggest a greater risk behavior during the first year of PrEP. Condomless sexual intercourses contribute to increase this rate. Comparison with a study we previously reported in HIV negative MSM showed increasing STI rates: from 12% [0–27.4%] to 36.0% [26.0–47.1%] [Philibert et al. JCM 2014]. Further studies are needed to measure long-term trends in STI acquisition following PrEP initiation.

O10

Fungal microbial translocation changes during treated acute and chronic HIV infection

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Introduction: (1→3)-β-D-glucan (βDG) plasma levels are used in the diagnosis of invasive fungal infections. Recently, βDG has also been considered as a marker of gut fungal translocation in a small group of HIV-infected patients. However, the contribution of ART in improving gut damage reducing fungal translocation remains unknown. Therefore, we aimed to determine the relationship of βDG plasma

levels with markers of gut damage and immune activation in acute (AHI) and chronic (CHI) HIV-infected patients on long-term ART.

Materials and methods: 134 participants without suspicion of fungal/bacterial infection and/or colitis were assessed in a cross-sectional analysis, including 74 AHI, 39 CHI patients and 21 uninfected controls. A subgroup of 32 AHI participants was prospectively assessed. Plasma βDG levels were quantified using Fungitell® assay and were compared with age, sex, viral load, CD4 count, CD4/CD8 ratio, markers of gut damage (I-FABP), microbial translocation (LPS, LBP and sCD14) and inflammation (IL1-β, IL-6, IL-8 and TNF-α).

Results: Plasma βDG levels were elevated during AHI (59.4±33.6 pg/mL, p=0.041) and CHI (135.6±48.6 pg/mL, p<0.001) versus controls (30.6±10.8 pg/mL). A significant negative correlation of βDG was only observed with CD4 count (r=-0.334; p=0.001). A significant positive correlation of βDG was observed with current viral load (r=0.429; p<0.001) in untreated group and with LBP (r=0.413; p=0.007), sCD14 (r=0.338; p=0.001), IL-6 (r=0.334; p=0.001) and IL-8 (r=0.506; p<0.001) in HIV-infected patients. βDG levels increased over 2-years in the untreated AHI (111.2±96.4 pg/mL p<0.001) and remained stable for those who initiated early treatment. CHI patients on 12±4 years of ART had the highest βDG levels (191.9±49.8 pg/mL, p<0.001).

Conclusion: Elevated plasma βDG levels correlated with the validated markers of gut damage, microbial translocation and immune activation. Plasma βDG levels did not decrease over time with ART and may directly contribute to maintenance of innate immune system activation.

O11

Two diseases, same person: moving towards a combined HIV and TB continuum of care

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Introduction: The human immunodeficiency virus (HIV) and *Mycobacterium tuberculosis* syndemic remains a global public health threat. Separate HIV and TB global targets have been set, however, success will depend on achieving combined disease control objectives along the care continua. We review available policy, budgets and data to re-conceptualize TB and HIV disease control objectives by combining HIV and TB care continua.

Materials and methods: For 22 WHO TB and TB/HIV priority countries, we used 2015 data from the published national HIV care continua, UNAIDS AIDSinfo, and WHO 2016 and 2017 Global TB Reports. Global resources available in TB and HIV/TB activities for 2003–2017 were collected from publicly available sources and policy data were collected from published guidelines.

Results: Of the 22 priority countries, 16 are recommending 'test and treat' for HIV and all are recommending isoniazid preventive therapy (IPT). People living with HIV (PLHIV) on ART ranged from 9–70%; viral suppression of PLHIV was 38–63%. TB case detection and treatment among TB patients ranged from 15–87% and TB treatment success between 71–94%. For HIV/TB patients, ART coverage and TB treatment success were comparatively lower at 1–71% and 20–87%, respectively. Only 3% of PLHIV in the 22 countries reported course of IPT.

Viral suppression data were not available for 13 countries and none of the countries included information regarding the following combined indicators: (a) TB treatment success and viral suppression among HIV/TB patients, (b) TB prevention and ART for PLHIV and (c) HIV prevention interventions for TB patients.

From 2003–2017, global international and domestic resources for HIV-associated TB and TB averaged $2.85 billion per year; the total for 2003–2017 was 43 billion dollars.

Conclusions: Reviewing combined HIV and TB targets demonstrate disease control progress and challenges. Using an integrated HIV and TB continuum supports HIV and TB disease control efforts focused on improving both individual and public health.

O12

Expansion of the enteric virome in untreated HIV infection

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Introduction: HIV infection causes important alterations in the gastrointestinal (GI) tract, leading to increased intestinal permeability, microbial translocation and alterations in the enteric microbiome. The aim of this study was to determine the effect of HIV-associated immunodeficiency on the enteric virome.

Materials and methods: Fecal samples were collected from 86 subjects, comprising 66 HIV-infected ART-naive (HIV+) and 20 HIV-negative (HIV-) individuals. HIV+ subjects presented a wide range of CD4 T cell counts (median: 149 cells/mm^3, IQR: 41-425) and were divided into 4 subgroups. We characterized the DNA and RNA enteric virome using shotgun next-generation sequencing. Viral sequences were identified using SURPI computational pipeline.

Results: We identified a variety of viral sequences assigned to plant viruses, phages and human viruses. We also detected Cryptosporidium virus in 2 samples from HIV+ individuals with CD4<50, demonstrating infections with the protozoan parasite *Cryptosporidium*. Human virus sequences were assigned to commensals and pathogens belonging to different families including *Anelloviridae*, *Papillomaviridae*, *Caliciviridae*, *Picornaviridae*, and *Adenoviridae* (Figure 1). Our data showed a marked expansion of human viruses in HIV+ subjects with CD4<50 and 50≤CD4<200 compared to HIV– subjects (p=0.0001 and p=0.0033, respectively). In particular, low CD4 T cell counts were associated with a striking increase in sequences from the *Anelloviridae* family (p<0.0001), commensal viruses suggested to reflect the overall state of immunosuppression. Importantly, 20 near full-length viral genomes were obtained, allowing phylogenetic analyzes of identified strains.

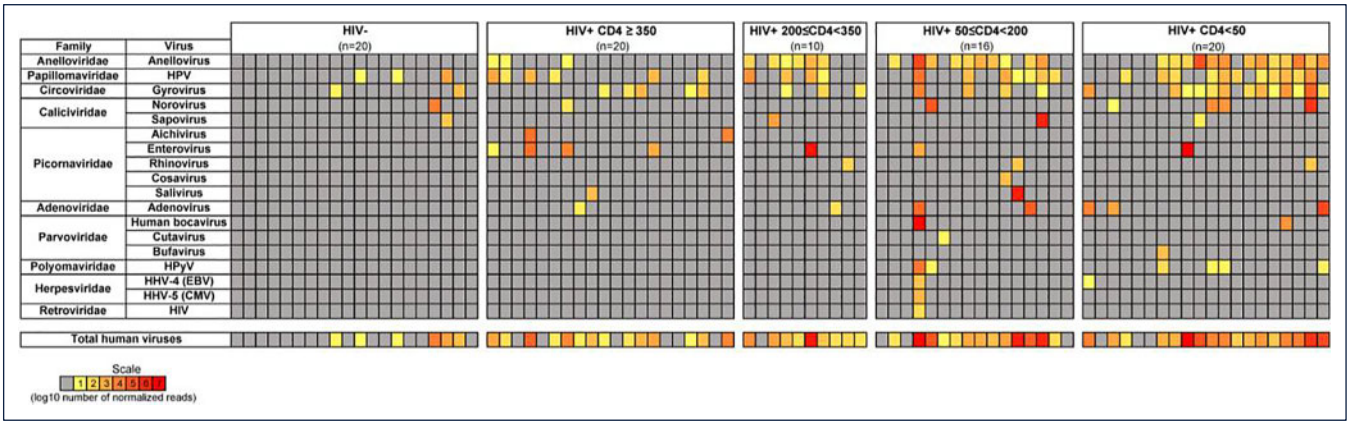

Figure 1. Heatmap showing the abundance of human viruses (y axis) by sample (x axis) grouped by HIV status and CD4 T cell count

Conclusions: Our data demonstrate an increase in sequences from human enteric viruses including commensals and pathogens in advanced HIV infection. This viral expansion is a reflection of HIV-associated immunodeficiency and might contribute to GI tract damage and persistent inflammation.

O13

A combination of broad neutralizing antibodies efficiently protects from *in vitro* cell-associated SHIV162P3 transmission

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Introduction: Most HIV-1 vaccine candidates have been evaluated for their effectiveness against cell-free viral challenges in non-human primate (NHP) models. However, HIV-infected cells in genital secretions could play an important role in sexual transmission of HIV. Moreover, cell-cell dissemination has been suggested to be more potent and difficult to neutralize than cell-free virus. The development of efficacious preventive strategies will greatly benefit from the knowledge about capability of broad neutralizing antibodies (bNAbs) to protect against cell-cell transmission.

Materials and methods: We developed a cell-to-cell transmission assay and assessed neutralization function of bNAbs using TZM-bl and human PBMC as target cells and *in vivo* SHIV162P3-infected splenocytes as donor cells. We compared the efficacy of 1st generation bNAbs (b12, 2G12, 2F5 and 4E10) and 2nd generation bNAbs (3BNC117, N6, 10-1074, PGT128, PG16, PGDM1400, 10E8 and PGT151) combinations against both cell-free and cell-cell transmission.

Results: When using first generation bNAbs, the triple combination of 2F5+2G12+4E10 was more effective to inhibit both cell-free and cell-cell transmission compared to the double combinations and to the single antibodies. 2F5 and 4E10 suppressed cell-free infection, but when cell-cell infection occurred, only 2F5 could prevent transmission to PBMCs.

Among the second generation bNAbs used, 10-1074, PGT128, PGT151 and N6 were the most potent to block the two infection modes, with 2 log lower IC50 values compared to first generation bNAbs. Moreover, a double combination of Abs could inhibit cell-cell transmission as well as the triple combination, being the association of 10-1074+PGT151 the most effective (IC50 0.26±0.06) among the combinations of 2 Abs used.

Conclusions: Our results demonstrate that cell-cell SHIV162P3 transmission is less sensitive to bNAbs compared to cell-free SHIV162P3 and that a combination of bNAbs may more efficiently prevent cell-cell transmission.

O14

Dolutegravir and the universal antiretroviral regimen: good may be the enemy of perfect

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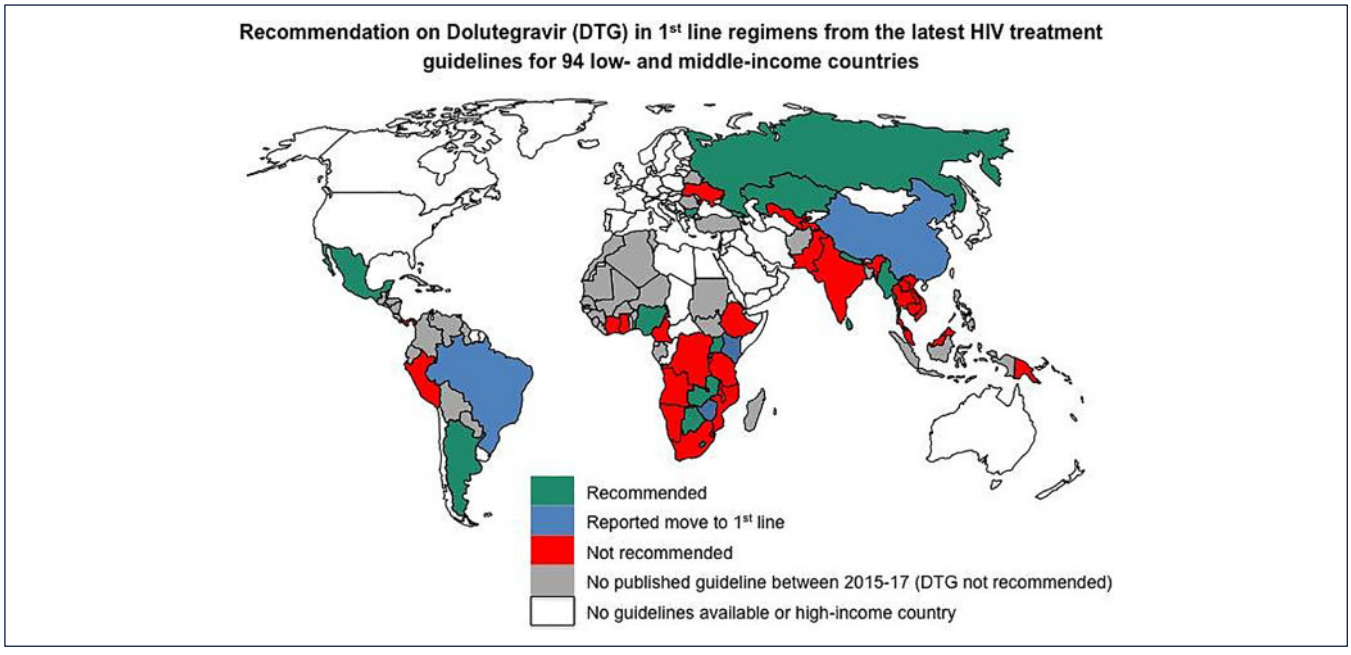
Introduction: Tenofovir, Lamivudine and Dolutegravir (TLD) is the best potential global universal HIV treatment regimen. Dolutegravir's tolerability, durability, effectiveness, simplicity, cost-savings and high resistance barrier could accelerate progress towards achieving 90-90-90.

Materials and methods: For 94 low- and middle-income countries (LMICs) with published national guidelines (92% of global HIV burden), we describe policy of Dolutegravir (DTG). We searched the Internet, PubMed, national reports and US President's Emergency Plan for AIDS Relief (PEPFAR) operational plans for nationally representative information on implementation status of DTG. We compare PEPFAR cost savings from TLD vs. Tenofovir-Lamivudine-Efavirenz (TLE) for 16 PEPFAR supported countries in sub-Saharan Africa (SSA). A similar comparison was done assuming achievement of 90-90-90 for these 16 countries.

Results: DTG is recommended in 17 LMICs including five countries in SSA. Despite not having formal published recommendations, DTG is already being procured in Kenya, Zimbabwe and other LMICs (figure 1). Although 2018 transition to TLD will likely be incomplete, transitioning all patients supported by PEPFAR in 16 countries to TLD ($75 pppy) when compared with current TLE costs ($79 pppy) could save $63,107,532 and $175,925,064 for 2020 and 2018–2020, respectively. Assuming achievement of 90-90-90, cost-savings for 2020 for the 16 countries would be $42,411,600. DTG and alternative service delivery models (e.g., reduced clinic visits, laboratory testing and viral load costs) could reduce overall treatment costs to well below $200 pppy in SSA. Cost savings accompanying the decrease in the development and transmission of resistant virus is incalculable.

Conclusions: Rapidly transitioning to DTG represents an opportunity to make a major impact if done swiftly. Other disease control efforts have made concerted efforts across multiple regions and countries when faced with the need for rapid action, why not HIV?



O15

Rate of HIV rebound and CD4 T cell kinetics in an ageing population on successful antiretroviral therapy

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Introduction: The number of people with HIV (PLWH) ≥50 years is on the rise. Although it is known that older age is associated with lower risk of viral rebound on ART, it is less clear whether this continues after the age of 50. Further, immune function in the HIV-negative population is known to decline in older age, but it is unknown if this is mirrored in PLWH with normalized CD4 count.

Materials and methods: PLWH attending a single HIV center were followed from the first date on or after 1/1/2005 with VL<50 cps/ml on ART until viral rebound (2 consecutive VL>200cps/ml) or last follow-up. Multiple viral suppression (VS) episodes per person were included. Rates of viral rebound were adjusted for potential confounders using Poisson regression with GEEs. For immune analyzes, people were followed from the first time they were aged≥50 yrs, VL<50 cps/ml on ART with CD4>500cells/μl, until date of viral rebound or last follow-up. CD4 count & CD4/CD8 ratio change over this time was calculated using multi-level linear regression.

Results: 4,045 people were followed for median (range) 6.3 (0.0–11.4) person-years and 1 (1–5) VS episodes. Viral rebound rates among >50 yrs were substantially lower than <40yrs and continued to decline with increasing age (Table 1). 1,118 people included in immune analyzes had median (range) follow-up of 3.9 (0.0–11.4) years. An increase in CD4 count of +12 cells/μl (95% CI +9,+15;p<.001) per year older and in CD4/CD8 ratio of +0.031 (+0.028,+0.035;p<.001) was observed.

Conclusions: Despite increasing prevalence of co-morbidities, rates of viral rebound continue to decline with increasing age. Further, this is one of the first studies showing CD4 T-cell preservation in those aged ≥50 years and stable on ART. These positive results need to be confirmed in other PLWH cohorts.

O16

Environmental and occupational exposures as predictors of airflow obstruction in an HIV tertiary care clinic

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Introduction: Studies have reported an increased prevalence of Chronic Obstructive Pulmonary Disease (COPD) in people living with HIV(PLWH) compared to HIV-uninfected controls. We aimed to determine whether occupational and environmental exposures were associated with the prevalence of COPD in unselected PLWH using spirometry to guide screening strategies for COPD.

Materials and methods: All persons ≥18 years of age followed at the Chronic Viral Illness Service in Montreal, Canada with HIV were invited to participate, regardless of smoking status or history of known COPD/asthma. Individuals underwent standard spirometric testing both pre and post salbutamol bronchodilator and completed questionnaires on smoking, occupational and environmental exposures. The presence of COPD was determined and multivariate logistic regression was used to evaluate the association between occupational and environmental exposures and COPD.

Results: There were 508 participants. Median age (Q1;Q3) was 51 (44;58), and 29% were female. Participants were on antiretrovirals for a median duration of 10 (6;17) years with 92% virally suppressed. Median CD4 count was 599 (440;786). Percentage of current, former and never smokers was 23%, 29% and 48%, respectively. Prevalence of COPD as defined by spirometry was 11%. Composite occupational exposures (≥3 months) and environmental exposure (≥6 months) were experienced by 23% and 34% of participants, respectively. The following risk factors for COPD were assessed: smoking history

Table 1. Rate of viral rebound stratified by age (P < 0.0001)

Current age (years)	% of follow-up time among			No. of rebounds	Person-years	Rate of viral Rebound* (65% CI)	Adjusted** rate ratio (95% CI)
	MSM	CD4 > 500	On ART > 10 years				
<40	52%	35%	13%	428	6787.7	6.3 (5.7, 6.9)	1.00
40–49	58%	38%	33%	289	5792.9	5.0 (4.4, 5.6)	0.77 (0.61, 0.96)
50–54	59%	41%	47%	213	5364.0	4.0 (3.4, 4.5)	0.62 (0.49, 0.80)
55–60	57%	41%	53%	130	3660.1	3.6 (2.9, 4.2)	0.57 (0.42, 0.77)
60–65	61%	39%	54%	50	1971.8	2.5 (1.8, 3.2)	0.50 (0.33, 0.76)
65–70	66%	41%	54%	30	1062.8	2.8 (1.8, 3.8)	0.49 (0.29, 0.84)
70+	55%	41%	51%	12	842.2	1.4 (0.7, 2.5)	0.24 (0.10, 0.58)
Per 5 years older:							0.83 (0.79, 0.88)

* Per 100 person years;
** Adjusted for gender, mode of HIV acquisition, time since start of ART, current CD4 count; MSM = men who have sex with men; ART = antiretroviral therapy; CD4 measured in cells/μl

(adjusted odds ratio(aOR): 2.5, 95% CI: [1.3; 5.2]), age (1.6 [1.2; 2.2]), female sex (1.0 [0.4; 2.0]), years since emigration to Canada (1.0 [0.9; 1.1]), composite occupational exposure (0.8 [0.4; 1.6]), and composite environmental exposure (1.1 [0.6; 2.1]).

Conclusions: Neither occupational nor environmental exposures were independently associated with airflow obstruction in our cohort of PLWH. Both smoking status (current or former) and older age independently predicted the presence of spirometry-defined COPD in PLWH.

O17

Investigating the effect of antiretroviral switch to tenofovir alafenamide on lipid profiles in people living with HIV within the UCD ID Cohort

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Introduction: Whilst reporting improved renal and bone safety profiles, studies have noted changes in lipid profiles among people living with HIV (PLWH) switching away from tenofovir disoproxil fumarate (TDF) to tenofovir alafenamide (TAF). This study aimed to characterise changes in lipids observed after switching to TAF-containing antiretroviral therapy(ART) in a real-world setting.

Materials and methods: We analyzed lipid values from PLWH enrolled in the UCD ID Cohort study who switched to TAF-containing ART from January 2016 to July 2017. Routine laboratory data, ART history and use of lipid lowering therapy (LLT) were analyzed. Lipids were stratified using NCEP-ATPIII 2016 criteria to assess severity of dyslipidaemia. Logistic regression analyzes were performed to identify factors associated with worsening dyslipidaemia.

Results: Of 775 PLWH enrolled in the cohort, 238 switched to TAF, 194 had both baseline and follow-up lipids measured a median 168 (100–286) days post-switch. Of the 194 analyzed, age was 46 (39–53), duration of known HIV was 10 (4.25–15) years. 70.6% were male and 69.1% Caucasian. Most common ART backbones pre-switch were TDF (85.1%) and abacavir (11.3%) with 23.7% on LLT at baseline and 4 (2.1%) commencing LLT post switch. Although total cholesterol (TC), LDL and HDL significantly increased (+0.3(-0.2–0.9) mmol/l, p<0.0001; +0.2(-0.1–0.7) mmol/l, p<0.001; +0.065(-0.09–0.19) mmol/l, p=0.003), TC:HDL ratio did not significantly change. When stratified (Figure 1), there were significant increases in the proportions of PLWH with more severe dyslipidaemia for TC and LDL (p<0.0001 and p=0.005). In logistic regression, use of LLT at baseline significantly attenuated the risk of worsening TC (0.23(0.053–1.035), p=0.06) or LDL (0.23(0.079–0.688) p=0.01) levels post-switch.

Conclusions: Although lipid profiles worsened post switch to TAF, use of LLT pre-switch attenuated the risk of worsening lipids. How these changes will impact on cardiovascular risk in PLWH remains to be determined.

O18

Understanding characteristics of daily and on-demand PrEP prescriptions

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Introduction: Pre-exposure prophylaxis (PrEP) may be prescribed in daily or intermittent 'on-demand' regimens, taken before and after sex. Decisions for which regimen will be most suitable for an individual seeking PrEP result from discussions between PrEP candidates and their clinicians. We aim to investigate trends in PrEP prescriptions related to patient characteristics, clinicians and calendar year.

Materials and methods: We analyze data from the l'Actuel PrEP Cohort from March 2015 to December 2017. Patient variables include age, education, revenue, number of sexual partners within 12 months, and drug use during sex. Clinicians were stratified by years in practice (<10 vs ≥10 years). Predictors of prescription are summarized by univariate and multivariate logistic regression.

Results: Among 1,556 MSM prescribed PrEP at baseline, 1217 received daily (78.2%) and 339 received on-demand (21.8%) baseline regimens. When compared to patients receiving daily prescriptions, those receiving on-demand PrEP prescriptions at baseline were on average older (39.3 vs 36.2 years, p<0.01). 32 clinicians prescribed PrEP; those with ≥10 years in practice prescribed on-demand PrEP more often than those with <10 years in practice (23.4% vs 18.2%, p=0.02). On-demand prescriptions were associated with older age, fewer sexual partners, lower likelihood of having a seropositive partner and greater likelihood of having a clinician with ≥10 years in practice (Table 1). No association was observed for education or revenue in the adjusted model. No changes in on-demand prescription rates since 2015 were observed.

Conclusions: Decisions for PrEP regimens should continue to be based off discussions between patients and providers to select the

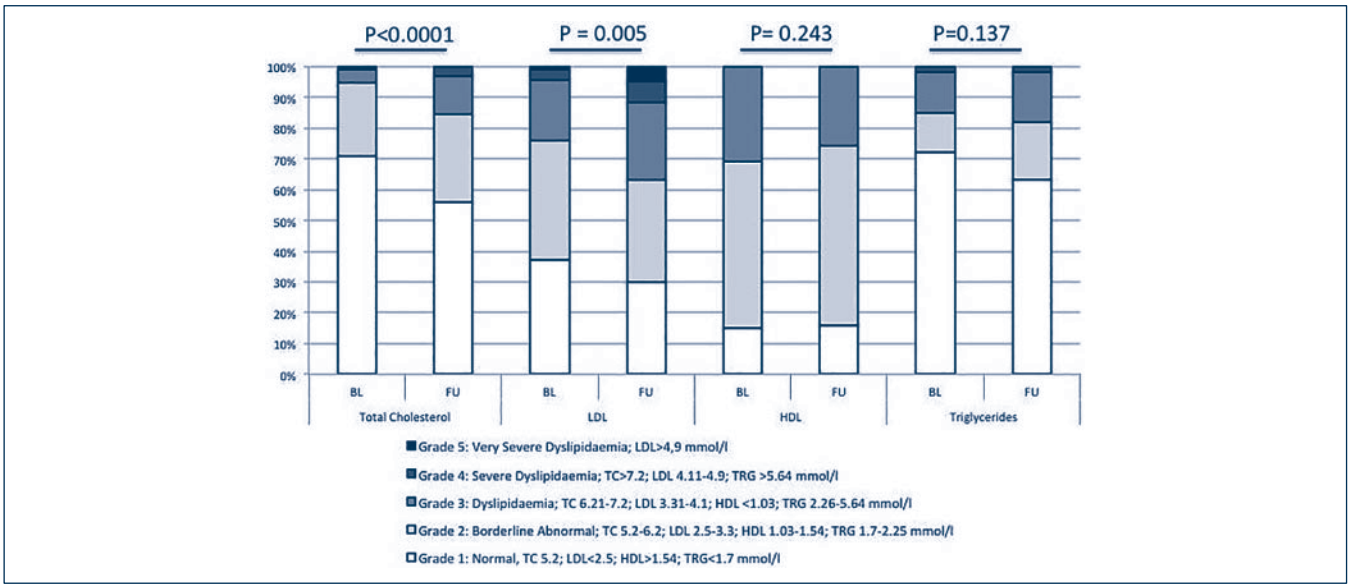

Figure 1. Stratified Lipid Profiles by NCEP ATP III 2016 criteria Pre- and Post-TAF switch.

Table 1. Predictors of PrEP prescription for On-demand relative to Daily PrEP

	Univariate Odds Ratio (OR) with 95% confidence inerval	Multivariate Odds Ratio (OR) with 95% confidence interval
Age	1.028*** (1.016–1.039)	1.027*** (1.013–1.042)
Number of regular partners within 12 months	0.943*** (0.902–0.985)	0.944** (0.899–0.992)
Number of occasional partners within 12 months	0.989*** (0.981–0.996)	0.990** (0.982–0.998)
HIV + partner	0.48** (0.27–0.85)	0.446** (0.229–0.869)
Revenue		
(<20,000)	(reference)	(reference)
20,000–350,000	1.089 (0.663–1.789)	1.006 (0.577–1.756)
35,001–55,000	1.356 (0.893–2.058)	1.261 (0.787–2.020)
550,001–75,000	1.393 (0.896–2.165)	1.000 (0.603–1.657)
75,000+	1.754*** (1.171–2.626)	1.116 (0.691–1.801)
Education		
Secondary and below	(reference)	(reference)
College	1.250 (0.777–2.011)	1.138 (0.670–1.934)
University	1.510** (1.006–2.266)	1.377 (0.864–2.196)
Clinician experience		
<10 years	(reference)	(reference)
≥10 years	1.376** (1.049–1.804)	1.636*** (1.187–2.255)
Years of PrEP consult		
2015	(reference)	Excluded
2016	0.960 (0.711–1.296)	Excluded
2017	0.941 (0.685–1.293)	Excluded

*** p<0.01, ** p<0.05, * p<0.1

regimen which best fits each individual's needs and should be adaptable over time. Offering a diversity of dosing strategies is essential to ensure individuals find combined prevention strategies that adapt to their lifestyle.

O19

High seroconversion rates following PrEP discontinuance in a Montreal clinic

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Introduction: Variations in individual PrEP use have been described by the seasons of risk theory; whereby patients may start and stop PrEP episodically. However, measures of rates of episodic PrEP use, reasons for PrEP discontinuation and rates of seroconversion following PrEP stops are scarce.

Materials and methods: We aim to measure rates of temporary and permanent PrEP discontinuations, describe stop reasons and measure seroconversion rates subsequent to stops using the l'Actuel PrEP cohort. We included patients who had initiated PrEP and returned for ≥1 follow-up visit prior to September 2017 (N=1258). Person-time at risk was calculated from stop date to date of seroconversion or censored at last negative HIV test among patients maintained in care.

Results: Our PrEP cohort measured 450 consistent users (36%), 114 users (9%) who temporarily stopped and re-initiated PrEP, 214 individuals who permanently discontinued (17%) and 480 individuals who have been lost to follow-up for ≥6 months (38%). HIV incidence following discontinuation was 3.9 cases per 100 PY. Among individuals who discontinued PrEP, the most commonly reported stop reasons were side effects (14%), financial reasons (9%), individual preference (7%), and changes in sexlife, such as entry into a stable relationship with seronegative partner (13%), entry into relationship with seropositive undetectable partner (4%), break-up with seropositive partner (4%) or sexual abstinence (10%).

Conclusions: For some, PrEP use may be a transient rather than constant HIV prevention method. The high rates of seroconversion following PrEP discontinuance indicate the need for clinical support based on contextual lifestyle factors that may lead individuals to stop PrEP, while remaining at high risk for HIV infection. Increased risk counseling and resources to reduce loss to follow-up for PrEP users are essential. Support of PrEP and combined prevention measures remain key to ending the epidemic by 2030.

Discussed poster presentations of the 2018 International Symposium on HIV and Emerging Infectious Diseases (ISHEID)

DP1

Attitudes towards harm reduction/HIV counselling and testing services of sexual partners of People who inject drugs

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Introduction: PWIDs remain one of the most vulnerable population in Georgia. Heterosexual transmission of HIV is increasing continuously and became the dominant 55.6% among new HIV registered cases, while Injecting drug use associated transmission decreased till from 43% till 23.9% in 2017. Harm reduction sites have been providing comprehensive services within GFATM program to more than 30,000 PWIDs annually. From 2016, sex partners of PWIDs are included in the program.

Material and methods: In-depth interviews and focus group discussions were applied to identify 1) attitudes, motivations and needs of sex partners of PWIDs, 2) Barriers and support factors for involvement in HIV prevention programs 3) services needed for sex partners. The convenience sampling was used to recruit PWIDs, sex partners and service providers. Study was provided in 5 cities of Georgia.

Results: The following barriers were revealed for sex partners of PWIDs: fear of HIV testing and associated stigma; low awareness of HIV transmission risks and the importance of testing; low awareness about anonymous free HIV testing services; feeling of shame to do HIV testing, especially in small cities; lack of women-oriented services at harm reduction sites; negative approach towards PWIDs from society and criminalization of drug consumption in the country. The needed services for sex partners of PWIDs are free HIV and HCV testing; medical consultations and referral to treatment HIV, HCV, Syphilis, TB, reproductive healthcare reatment programs.

Conclusions: More efforts are needed to address the barriers that were revealed by this study. Harm reduction program personnel should increase of motivation of sex partners of PWIDs to do testing on HIV and other infections; Risk counseling and working with couples should be enhanced for decreasing HIV associated risks and better utilization of harm reduction services; Besides, women-oriented services should be developed and adjusted to the needs of sex partners of PWIDs.

DP2

Age-specific national HIV care continua in sub-Saharan Africa

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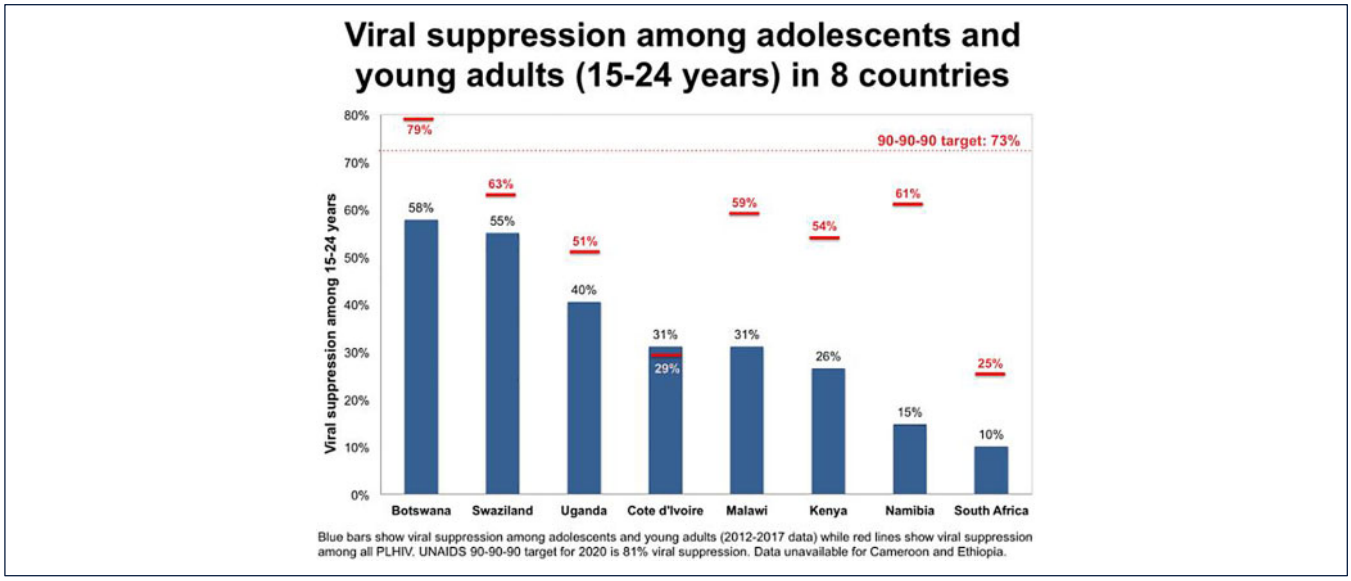
Introduction: In sub-Saharan Africa (SSA), epidemic control requires increased HIV testing and treatment for adolescents and young adults (15–24 years). For 21 highest burden countries in SSA (95% regional HIV burden), we reviewed the published national HIV care continua for this population and compared the progress towards 90-90-90 with other age groups.

Materials and methods: For the 21 countries, we searched PubMed, US President's Emergency Plan for AIDS Relief (PEPFAR) operational plans, country progress reports and conference abstracts for the latest age-specific continua.

Results: Of the 21 countries, age-specific continua, published between 2012–2017, were available for only 10 countries (53% regional burden). The age distributions were <15,15–24 and >25 years. All countries reported data on second 90 (on ART) while three countries on first 90 (diagnosed) and eight countries on third 90 (viral suppression). ART coverage among 15–24-year old living with HIV varied from 17%-72% and was significantly lower than the ART coverage for <15 and >25-year-old in all but three countries (Uganda, Cote d'Ivoire and Cameroon). Viral suppression among 15–24-year olds varied from 10%-58% and were lower than the national average in all countries except one (Figure 1). Botswana has achieved 90-90-90 for all age groups except 15–24-year-old. In Namibia, ART coverage and viral suppression among all PLHIV were 49 and 46 percentage points higher than that among 15–24-year old, respectively. Achieving 90-90-90 requires achieving 90-90-90 for 15–24-year olds.

Conclusions: Comprehensive published HIV care continua for adolescents and young adults are limited and there exist some inconsistency in the data, calling for improved M&E for reliable data. The results are similar to PEPFAR Population-based HIV Impact Assessments. There is also a need for improved HIV efforts for the bulging youth population in SSA while sustaining the progress made towards 90-90-90 for paediatrics and adults.



DP3

Analysis of quality-adjusted life years (QALYs) in HIV-positive and HIV-negative subjects enrolled to the UPBEAT (Understanding the Pathology of Bone Disease in HIV Infected Subjects) cohort

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Introduction: The QALY is a generic measure of disease burden that captures both the quality (QoL) and quantity of life lived. We aimed to compare QALYs between HIV-positive (HIV+) and HIV-negative (HIV-) subjects.

Materials and methods: Cross-sectional analysis of QALY in HIV+ and HIV– subjects enrolled in the HIV UPBEAT cohort. QALYs were calculated using the SF-6D, which is derived from the SF-36 Health survey, as a measure of health utility, multiplied by the expected remaining lifespan. Data on life expectancy was obtained from the national statistics office (http://www.cso.ie): 78.4 years for men and 82.8 years for women. SF-6D and QALY data are mean (SD). Between group differences were assessed using Mann-Whitney/Student's t-test and Chi-square tests. Impact of HIV status on QALY was assessed using multivariable linear regression.

Results: A total of 244 (106 HIV+, 138 HIV-) subjects were included in the analysis. The HIV+ group was younger, more likely male and of African origin. Demographic and socio-economic differences are shown in Table 1. All HIV+ were on antiretroviral therapy (ART), 98% had undetectable HIV-RNA, median CD4+ (IQR) count was 662 (513, 851) cells/mm^3 and median time since HIV diagnosis was 11.0 (9.0, 14.0) years. Despite lower SF-6D in HIV+ (0.75 (0.10) vs HIV– (0.82 (0.08), p=0.001), the calculated unadjusted QALYs were similar between the two groups (24.4 (7.6) vs 24.6 (8.34)). However, after correcting for differences in age, HIV+ status was independently associated with a mean reduction of 2.8 QALYs (95% Confidence Interval –3.7, –1.8, p<0.0001). Further adjustment for other demographic and socio-economic parameters minimally impacted on the observed association (–2.0 (–3.0, –1.0), p<0.0001)

Conclusions: In our cohort, HIV+ subjects on effective ART reported lower health quality compared to HIV– individuals. HIV+ status was associated with a loss of 2 QALYs after controlling for age and other potential socio-demographic confounders.

DP4

Persistent intracellular HIV transcription in individuals on stable antiretroviral regimens

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Introduction: HIV transcription frequently persists intracellularly in virologically suppressed patients. We sought to evaluate HIV persistent transcription (HIVpt) in patients on stable first line regimens.

Materials and methods: Virologically suppressed patients for one year on first-line treatment with EFV or ATV combined with emtricitabine and tenofovir were eligible for this study and followed up for one year. Simultaneous ultrasensitive subpopulation staining/hybridization in situ (SUSHI) was performed to identify HIVpt in CD4+ and CD4+CD45RO+ T-cells. Factors associated with HIVpt were evaluated with logistic regression models.

Results: In the CD4+ T-cell population, HIVpt affected 23 out of 51 patients, whereas in the CD4+CD45RO+ T-cell population, HIVpt was present in 29 out of 51. HIVpt in the CD4+CD45RO+ T-cell population may be associated with ATV treatment (OR 2.86, 95% CI 0.87–9.37, p=0.083). No association of HIVpt status with loss of virological suppression or CD4 evolution was observed.

Conclusions: The HIVpt profile may differ across different cell populations and antiretroviral regimens. Further studies are required to define the clinical significance of this finding.

DP5

Clinical resistance to dolutegravir assessed by next generation sequencing in pre-exposed raltegravir patients

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Table 1. Characteristics of HIV-positive and HIV-negative subjects included in the QALY analysis

Socio-demographic variables N (%) unless specified	HIV-positive (N=106)	HIV-negative (N=138)	P value
Age. median (IQR)	47.9 (41.3, 53.6)	51.6 (43.8, 57.0)	0.002
Male	74 (73.3)	66 (47.8)	<0.0001
African	33 (34.4)	17 (12.6)	<0.0001
Third Education level	54 (65.9)	79 (61.7)	0.56
Currently Employed	50 (73.5)	91 (78.4)	0.47
Income ≤ 575 euros/week	53 (72.6)	51 (43.6)	<0.0001
Current smoker	24 (24.0)	13 (9.6)	0.006
Use of recreational drugs	21 (21.9)	4 (3.0)	<0.0001
Other comorbidities	19 (19.0)	16 (11.8)	0.14
QALY assessment (mean (SD))			
Health utility score (SF-6D)	0.75 (0.10)	0.80 (0.07)	0.001
Survival men	30.8 (9.3)	27.7 (8.8)	0.06
Survival women	36.7 (6.7)	33.4 (9.6)	0.06
QALY	24.4 (7.6)	24.6 (8.3)	0.82

Percentage of those with reported data

Introduction: To date, three HIV IN antagonists have been approved for clinical use: raltegravir (RAL), elvitegravir (EVG), and dolutegravir (DTG). Development of drug resistance mutations is a common problem in antiviral therapy and mutations affecting the susceptibility of the virus to RAL and EVG have rapidly emerged. We described two real-life cases with DTG virological failure in pretreated RAL patients.

Materials and methods: Two HIV-1 patients (a 40-year-old woman and a 54-year-old man) previously treated by RAL anti retroviral therapy regimen (ART) switching to a fix ART combination including DTG, progressively increased their HIV RNA viral load from undectable to 3.5 and 4.80 log /mL respectively. Longitudinally collection of their plasma was assessed over a week at the time of virologic failure. RT, PR and INT sequencing were performed using NGS on MiSeq (Illumina). HIV subtypes and drug-resistance interpretations were identified using DeepChek® Software. The prevalence of drug resistance was defined according to the list of mutations as previously described. Resistance was classified into three distinct groups (susceptible, possible resistance and resistance) as defined by ANRS-26, Stanford DB-8.3 and Rega intitute-9.1.0.

Results: For patient 1 (A1 subtype), the following INT resistance mutations were found L74I (99%); E138K (98%); G140A (99%); S147G (98%); Q148R (99%). For patients 2 (B subtype), the following INT resistance mutations were found: L74I (99%); E138K (99%); S147G (99%); Q148R (99%); N155H (99%); E157Q (99%). These mutations L74I, E138K, Q148R; N155H; E157Q were associated with resistance to the DTG drug according to the ANRS.

Conclusions: Mainly due to non-compliance of the ART regimen and the recommended wide uses of INSTI, resistance mutations were more and more frequently observed. These two cases highlight the problematic of INSTI resistance and hard-to-cure HIV patients with potential high impact on their life expectancy.

DP6

Compliance with preventive recommendations against malaria in travellers to tropical countries

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Introduction: Malaria is a mosquito-borne infection with ample distribution in tropical countries. Several recommendations should be issued to prevent this parasitic infection in travelers to areas of risk.

Materials and methods: A prospective online questionnaire was sent after return from tropical countries to consecutive travelers attending a Travel Medicine unit located in Madrid, from June to December 2017.

Results: A total of 3,856 travelers were attended in the second semester of 2017. Online questionnaire responses from 1,305 individuals (57.4% women, mean age 38.9±9.8 yo) were analyzed. Purpose of travel was tourism in 81.7%, cooperation in 20.9% and work in 5.2%, and mean duration of the stay was 3.2±1.4 weeks. Main destinations were Thailand (12%), Kenya (11%), India (10%), Cambodia (10%) and Vietnam (9%). Most subjects referred use of skin repellents (89.7%), but many of them admitted 'not frequent' use (54.7%). A total of 585 (48.3%) travelers slept under bed-nets, without permethrin in 72.3%; bed-net use was rated as 'very frequent' in 56.8% of travelers sleeping in accommodations without protection against mosquitoes. Chemoprophylaxis for malaria was prescribed for 633 travelers (52.4%), atovacuone/proguanil in 94%, doxycycline in 3%, chloroquine in 1% and mefloquine in 1%; compliance was good in 79%, while in 16% of cases it was never started. Reasons for poor compliance with antimalarials was perception of low risk (47%), forgetfulness (27%), concerns about toxicity (16%) and real toxicity (10%); most patients (83%) referred no adverse effects. Most common toxicity attributed to antimalarials were GI complaints in 64%, sleep disturbances in 35%, headache in 18%, dysthymia in 13% and dizziness in 13%.

Conclusions: Protective recommendations against mosquito bites are inconsistently followed by visitors of tropical countries. Up to 20% of subjects who are prescribed chemoprophylaxis against malaria do not follow it properly, furthermore it is not even started among most of these subjects.

DP7

Universal HTLV screening in transfusion centers unveals significant misdiagnosis of HLTV-1 infection in Spain

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Introduction: Around 10 million people are estimated to be infected with HTLV-1 worldwide. However, only less than 10% of HTLV-1 carriers develop any clinical manifestations lifelong.

Materials and methods: The HTLV Spanish Group was founded 25 years ago. Its main goal was to establish a national registry of HTLV-infected individuals and produce adequate recommendations for preventing further spread and transmission within our country. A total of 40 hospitals across the Spanish geography are contributing.

Results: A total of 351 individuals had been diagnosed with HTLV-1 infection up to December 2017. Overall, 62% are women with a median age of 41 years. Most individuals came from Latin America (63%), although 18% are native Spaniards. Symptomatic HTLV-1 infections have been diagnosed in 69 (19.7%) of carriers living in Spain, being HAM/TSP in 35 and ATLL in 26 patients.

New diagnoses of HTLV-1 infection have risen sharply in Spain since 2008, largely as result of introducing HTLV screening in blood banks. Since then, 247 cases (70%) of total HTLV-1 cases have been identified, being 104 (44%) first time blood donors. All of this subset of patients was asymptomatic whereas 57 out of 138 cases identified at hospitals presented with clinical symptoms (23 HAM/TSP, 19 ATLL and 15 with other HTLV-associated conditions). In addition, 5 cases acquired HTLV-1 infection after received solid organ transplants from 2 HTLV-1+ donors (4 kidneys and 1 liver). Interestingly, all but one developed HAM/TSP shortly within the first year of surgery.

Conclusions: HTLV-1 misdiagnosis must be common in Spain, based on the ratio of symptomatic/asymptomatic carriers at the national registry. Given that immigrants from HTLV-1 endemic regions currently represent 10% of the 47 million country population, universal HTLV screening of first-time blood donors and solid organ transplant donors and recipients (to prevent transmission and disease) should be consider. It would be cost-effective, halting the spreading and clinical burden of HTLV-1 in Spain.

DP8

Active hepatitis C is associated with a larger HIV reservoir in successfully treated patients

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Introduction: HIV-chronically infected patients can retain an extremely low viral reservoir (LVR). Awareness of factors associated with a LVR could be useful for HIV eradication strategies.

We analyzed the prevalence of LVR and potentially associated risk factors in a cohort of successfully treated HIV-patients

Materials and methods: Successfully treated HIV-patients were identified among a cohort of randomly selected subjects. Background parameters, CD4 and CD8 cell count, HIV-RNA and HIV-DNA viral loads, hepatitis B and C serological status and viral loads, markers of immune activation and neuropsychological performance evaluated by a single trained neuropsychologist were collected. Active hepatitis C was defined by positive HCV antibodies and detectable viral load.

To identify potential parameters associated with LVR, patients were divided into two groups: those with LVR and those without LVR (wLVR), according to HIV-DNA values below or above 10 copies/106PBMC, respectively.

Results: Among 265 patients included in the cohort, 95 had been successfully treated for at least 6 months (mean age 46, 71% male, 29% with AIDS, 40% HCV-coinfected, mean CD4 nadir: 232, mean CD4 cell count: 592, years of contamination: 14; years on cART: 9).

Eleven patients had a LVR (11.6%). Active hepatitis C but not HCV-positive serology was the only risk factor for detectable HIV-DNA (0% in LVR, 32% in wLVR, p=0.03). Patients with HCV but inactive hepatitis had either received Peg-IFN and Ribavirin therapy or had spontaneously cleared HCV-RNA.

Neither months on HCV treatment, time periods of HCV therapy nor neurocognitive performance differed between LVR and wLVR groups.

Conclusions: Approximately 10% of successfully treated subjects harbored LVR. Active hepatitis C appears to affect the size of the HIV reservoir. Strategies for HIV eradication should therefore consider the role of hepatitis C, while interaction mechanisms between the two viruses should be investigated.

DP9

High rate of HIV-1 co-infection in HIV-2 West African immigrants living in Spain

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Introduction: Whereas HIV-1 spreads globally, HIV-2 is mainly found in West Africa, where dual 1+2 coinfection (HIV-D) is recognized in 0.3–1% of HIV+ persons. Our study aims to report the number and characteristics of HIV-D patients recorded at the Spanish HIV-2 registry.

Materials and methods: The Spanish HIV-2 Study Group was founded in 1989. It has been collecting information on diagnosis and monitoring HIV-2 patients nationally. Many Spanish hospitals constitute this network and provide data such as CD4+ counts, antiretroviral therapy (ART), HIV-1 co-infection, HCV/HBV and clinical manifestations.

Results: A total of 359 HIV-2 persons had been recorded so far. Overall, 37 (10.3%) were HIV-D+ and are our study population. Male were 62.2%, 19 (51.3%) came from West Africa whereas 7 (18.9%) were native Spaniards. African countries of origin were: 8 Guinea-Bissau, 3 Equatorial Guinea, 3 Gambia, 2 Cameroon, 2 Liberia, 2 Senegal, 1 Ivory Coast, 1 Mali, 1 Ghana, 1 Mozambique, 1 Nigeria and 1 unspecified Sub-Saharan country. There was one Brazilian and one French native as well.

The 75% of HIV-D+ persons harboured HIV-1 non-B subtypes. Co-infection with HBV (HBsAg+) was seen in 3 (8.1%). At diagnosis, 29.7% had AIDS-defining events. Median CD4 count was 145 cells/mm^3 and median plasma HIV-RNA was 4.51 log copies/mL for HIV-1 and 3.64 log copies/mL for HIV-2. Last recorded ARTs were based on: boosted-PI (14: 7 LPV/r, 6 DRV/r and 1 ATV/r), INSTI (6: 3 DTG and 3 RAL) and 1 with 3 NRTI (Trizivir). After beginning ART, undetectable viremia was achieved in 88.9% for HIV-1 and in 78.5% for HIV-2. Median CD4 counts risen up to 512 cells/mm^3.

Conclusions: Roughly 10% of HIV-2+ persons in Spain are coinfected with HIV-1. Most of them came from West Africa. In spite of high subtype variability, ART was effective in around 80%. Given the relatively large population of West Africans in Spain and the continuous flux of immigration from endemic areas, HIV-2 infection should always be excluded at diagnosis in all HIV-seroreactive persons.

DP10

Prospects for reprogramming telomere length to address HIV-driven accelerated ageing associated with cell senescence

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Introduction: Combination antiretroviral therapy (cART) has extended the longevity of HIV-infected patients. In cART patients, accelerated senescence still occurs leading sequelae commonly seen in older uninfected adults. However, this has often resulted in increased presentation of accelerated age-associated disease. Leukocyte telomere length (TL) is an effective marker of the progression of HIV-associated premature aging. The implementation of TL assays could provide a diagnostic to technologies in regenerative medicine allowing the transplantation of HIV-resistant hematopoietic stem cells with reset TL in HIV patients experiencing immunosenescence.

Materials and methods: HIV patients not responding to cART exhibit CD8+ CD28low lymphocytes telomere Terminal Restriction Fragment (TRF) length comparable to centenarians, indicative of cell senescence. Telomere length assays such Q-FISH, STELA, and TeSLA provide improved measures of relevant telomere length allows for cross-experimental and cross-study comparisons and may provide high-throughput platform to measure telomere attrition. Multivariable Analyzes applied to evaluations of shortened TL & HIV disease have clinical application in the determination to engraft TL reprogrammed HIV-resistant hematopoietic stem cells.

Results: Associations between TL, HIV-specific variables, and AIDS-defining illnesses demonstrate low nadir CD4+ cell counts and short TL in CD8+ cells place patients at risk for viral permissiveness and immunosenescence respectively. Preclinical data demonstrate recovery of TL and engraftment of genetically-modified primitive hematopoietic stem cells in fatty bone marrow without myeloablation using reprogramming technology.

Conclusions: Telomere studies have thus provided into a novel facet of memory CD8+ T lymphocyte dynamics of exhaustion of protective antiviral immune responses. Strategies to address replicative senescence by regenerating hematopoiesis and improved TL companion diagnostics address certain aspects of premature aging in HIV patients.

DP11

Impact of HIV-associated immunodeficiency on the enteric bacterial microbiome

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Introduction: Alterations in the enteric microbiome have been reported in HIV infection (depletion in key commensals, reduced microbial diversity and expansion of the virome). We sought to understand the effects of HIV-associated immunodeficiency on the enteric bacteriome.

Materials and methods: Stool samples were collected from 84 individuals (Table 1). All HIV-infected individuals were naive to antiretroviral therapy. We used 16S rRNA sequencing and QIIME to describe and analyze the bacterial microbiome.

Results: Bacterial diversity was reduced with HIV infection (p<0.001), with immunodeficiency (HIV– vs CD4<200, p=0.038) and antibiotic use (p<0.001). Unweighted Unifrac analysis followed by ANOSIM testing showed no clustering by HIV status (p=0.94), weak clustering by CD4 group (HIV– vs CD4<200 p=0.028 and CD4<200 vs CD4>200, p=0.002) and strong clustering by antibiotic use (p=0.001). Sixty-six operational

taxonomic units (OTUs) were enriched in HIV– (*Ruminococcaceae* family and *Faecalibacterium prausnitzii*) vs HIV+. When stratifying by CD4 group: 241 and 12 differential OTUs were identified between HIV– and CD4<200 (*Clostridiaceae*, *Ruminococcaceae* and *Succinivibrionaceae* were enriched in HIV-) and HIV– and CD4>200 (*F. prausnitzii* was enriched in HIV-). When comparing CD4<200 and CD4>200, 174 OTUs were differentially expressed (genus *Prevotella* was enriched in CD4>200). When stratifying by antibiotic use independently of HIV status, 145 OTUs were discriminant with the genus *Enterococcus* being enriched in those taking antibiotics while *Clostridiaceae*, *Veillonellaceae* and *Lachnospiraceae* were enriched in those who did not.

Conclusions: Our results suggest that antibiotic use strongly contributes to bacterial community structure, although advanced HIV infection may also play an important role. Here HIV-associated immunodeficiency strongly correlated with antibiotic use, illustrating the need to account for confounders when studying the enteric microbiome in HIV infection.

	HIV–	CD4 GROUPS		
		HIV+ CD4 > 200	HIV+ CD4 < 200	P value
Number	20	28	36	–
Age, mean (min-max)	33.20 (20–44)	29.25 (20–47)	37.17 (21–59)	0.01
Sex, F: female, M: male, number (%)	F: 3 (15); M: 17 (85)	F: 0 (0); M: 28 (100)	F: 6 (16.7); M: 30 (8.3.)	0.079
CD4+ T cell (cells/mm^3). median [IQR]	1014 [754–1218]	453 [328.5–659]	43.5 [20.25–87.75]	0.0001
>500, number (%)		10 (35.7)		
200–500, number (%)		18 (64.3)		
50–200, number (%)			16 (44.4)	
<50, number (%)			20 (55.6)	
CD4/CD8 ratio, median [IQR]	1.4 [0.92–1.78]	0.365 [0.2125–0.5575]	0.1 [0.0525–0.25]	0.0001
HIV-1 plasma viral load (copies/mL), median [IQR]	NA	61,954 [9,888–126,209]	280,460 [92,384–598,318]	0.0003
Antibiotic use, number (%)				
Yes	2 (10)	2 (7.1)	29 (80.6)	0.001
No	18 (90)	23 (82.1)	6 (16.7)	
Missing data	0 (0)	3 (10.7)	1 (2.8)	
Antibiotic use within CD4 groups, number (%)				
>500		Yes: 0 (0), No: 9 (90), Missing: 1 (10)		
200–500		Yes: 2 (11.1), No: 14 (77.8), Missing: 2 (11.1)		
50–200			Yes: 11 (68.8), No: 5 (31.3), Missing: 0 (0)	
<50			Yes: 18 (90), No: 1 (5), Missing: 1 (5)	

IQR: Interquartile range

DP12

Expected response after an animal attack in travellers who had received pre-exposure prophylactic vaccination for rabies

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Introduction: On January 2018, the World Health Organization (WHO) launched reviewed recommendations for rabies immunization, aiming at simplified regimens to make rabies protection more affordable worldwide. As new WHO statement accepts just two doses of rabies vaccine at days 0 and 7 in preexposure prophylaxis (PrEP), awareness of vaccinees about risks and medical interventions after an animal exposure has become maybe more important.

Materials and methods: A prospective survey in travelers attending a Tropical and Travel Medicine unit located in Madrid was performed along 2017. All consecutive subjects that had received complete PrEP vaccination for rabies in the past were recruited; an anonymous questionnaire was designed to assess their awareness on rabies risks and the measures to take in case of animal attack.

Results: A total of 100 travelers (mean age 34±11 years-old, 58% females) were interviewed. Rabies PrEP had been administered 5±5 years ago, before traveling to Asia in 43%, Africa in 39% and America in 18%. India (24%), Uganda (8%) and Ethiopia (7%) were the most common destinations when PrEP was indicated. Administration of PrEP was done most frequently in volunteers (50%) and tourists (41%). Most vaccines recognized dogs (97%) and monkeys (85%) as potential risk for rabies, but less frequently bats (73%) and cats (36%). Animal scratching was viewed as indication for postexposure prophylaxis (PEP) only in 59% of travelers. Awareness of recommendations after an animal attack was as follows: intense wound washing in 68%, antibiotic prophylaxis in 42% and need for PEP vaccine doses in 82%.

Conclusions: Among travelers that have received rabies PrEP, cat and bat exposure and animal scratching are not frequently viewed as risks for rabies. Need for wound cleansing and antibiotic prophylaxis after animal attack are often overlooked by rabies vaccinees.

DP13

Are data-driven combined prevention services the key to ending the epidemic? Take-home messages from HIV cases diagnosed from 2008 to 2016 at l'Actuel

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Table 1. Comparison of demographic and clinical traits among individuals diagnosed with HIV at l'Actuel stratified by three-year periods (2008–2016)

Variable	Diagnosed 2008–2010 (N = 449)	Diagnosed 2011–2013 (N = 394)	Diagnosed 2014–2016 (N = 317)	Total from 2008–2016 (N = 1160)	P-value
Age at diagnosis, Median (IQR)	36 (29–44)	33 (26–43)	32 (26–41)	34 (27–43)	<0.01
Baseline CD4 (cells/ml), Median (IQR)	352 (230–470)	410 (270–541)	427 (310–593)	390 (260–530)	<0.01
Baseline VL (log10cop./ml), Median (IQR)	4.8 (4.2–5.2)	4.8 (4.2–5.1)	4.7 (4.0–5.3)	4.7 (4.2–5.2)	0.66
Male sex, N (%)	415 (92.4%)	371 (94.2%)	294 (92.7%)	1080 (93.1%)	0.5
MSM, N (%)	379 (84.4%)	349 (88.8%)	276 (87.1%)	1004 (86.6%)	0.17
Injecting Drug User, N (%)	23 (5.1%)	6 (1.5%)	8 (2.5%)	37 (3.2%)	**<0.01**
Seropositive partner, N (%)	95 (21.2%)	103 (26.1%)	48 (15.1%)	246 (21.2%)	**<0.01**
Multiple partners, N (%)	163 (36.3%)	141 (35.8%)	105 (33.1%)	409 (35.3%)	0.64
Originated from HIV endemic region, N (%)	31 (6.9%)	26 (6.6%)	23 (7.3%)	80 (6.9%)	0.94

Introduction: Combined prevention scale-up in Montreal includes Treatment as Prevention (TasP), promotion of frequent HIV testing and condom use, Post-Exposure Prophylaxis (PEP) and Pre-Exposure Prophylaxis (PrEP). Evidence linking combined prevention and changes in HIV transmission patterns is scarce, we investigate real-world data to better understand these patterns.

Materials and methods: We analyze data from the l'Actuel HIV cohort stratified into three periods (2008–2010, 2011–2013 and 2014–2016) (Table 1) to explore time trends associated with combined prevention activities. Differences in baseline traits including demographics, risk factors for seroconversion, and clinical factors (CD4 count, viral load) were compared between groups using Kruskal-Wallis and Chi-Square tests.

Results: Among 1,160 HIV diagnoses, 93% occurred among males and 87% among men who have sex with men (MSM). Median age at diagnosis decreased from 36 to 32 from 2008–2010 to 2014–2016. Increases were observed in median baseline CD4 counts from 352 to 427 copies/mL from 2008–2010 to 2014–2016. Decreasing trends in HIV transmission risk factors such as having a seropositive partner and injecting drug use were observed. Prior PEP episode(s) were reported among 119 (10.2%) of those diagnosed from 2008–2016.

Conclusions: HIV prevention efforts should be increased among MSM (below age 35) among whom the majority of diagnoses are occurring. Increases in baseline CD4 counts suggest earlier diagnosis, likely due to frequent testing. Decreases in seropositive partners and injecting drug use as risk factors for HIV infection point towards the potential impact of TasP and clean needle exchanges, respectively. Prior experience with HIV prevention via PEP was measured among only 10% of the cohort, indicating that increased promotion and access to PEP and PrEP are needed for populations at risk.

DP14

Overexpression and activation of colony-stimulating factor 1 receptor in the SIV/macaque model of HIV infection and neuroAIDS

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Introduction: Colony-stimulating factor 1 (CSF1) regulates the proliferation, survival, and differentiation of macrophages (MPs) through the receptor tyrosine kinase CSF1R. Levels of CSF1 in the cerebrospinal fluid are elevated in HIV patients with cognitive impairment. However, little is known about the expression of its receptor CSF1R in the brain. Using the simian immunodeficiency virus (SIV)/macaque model of HIV infection, we investigated whether CSF1R is expressed on brain MPs and microglia (MG) in vivo and whether it is activated after lentivirus infection in vivo and contributes to development of encephalitic lesions.

Materials and methods: We examined, using multi-label and semi-quantitative immunofluorescence microscopy, the protein expression level and cellular localization of CSF1R in cortical brain tissues from uninfected (n=3) and SIV-infected macaques with (SIVE, n=4) or without (SIVnoE, n=4) encephalitis.

Results: In the uninfected brain, CSF1R protein was detected only in MG and brain MPs but not in other brain cell types. MG constitutively expressed CSF1R at low levels and its expression was largely unchanged in SIVnoE and SIVE animals. Brain MPs including perivascular macrophages (PVMs) expressed higher levels of CSF1R, compared to MG. We found significantly increased expression of CSF1R on the infected PVMs and lesional MPs in the brain of SIVE animals. Moreover, the per-cell expression of CSF1R determined by its mean pixel intensity (MPI) correlated positively with the MPI of SIV p27 in SIV-infected PVMs. Using phosphorylated CSF1R at tyrosine residue 723 as a marker for CSF1R activation, we found activation of CSF1R signaling in infected brain MPs. We also found colocalization of CSF1R and its ligand CSF1 in brain MPs in the brain of SIVE animals.

Conclusions: These findings are useful for developing a selective approach targeting infected brain MPs, with brain-penetrant CSF1R inhibitors now available, for elimination of CNS MP reservoirs, while not affecting resting uninfected $CSF1R^{low}$ MG and PVMs.

DP15

Healthy moms and healthy infants: 12 years of successful mother-to-child HIV transmission prevention in a community health center in Bamako, Mali

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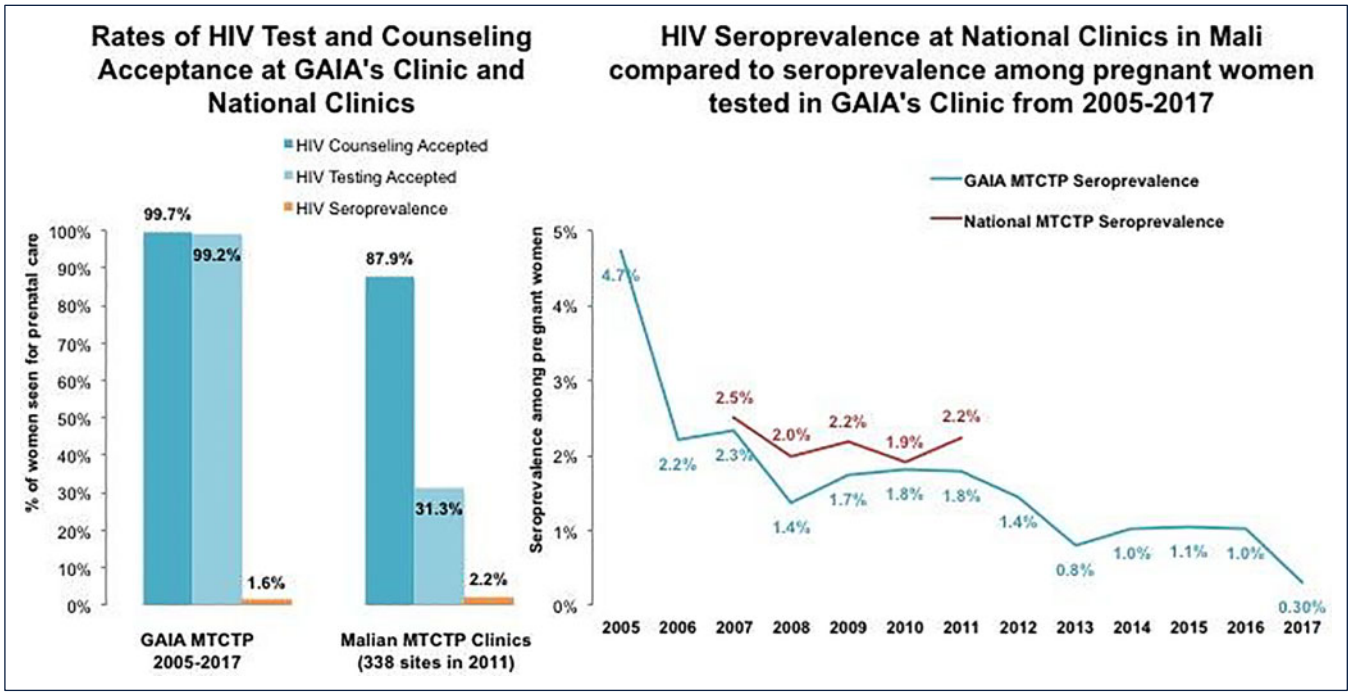
Introduction: Community clinics (CSCOMs) are the primary access point to healthcare in West Africa. While HIV testing is available in some CSCOMs, it is not consistently offered to all women seeking prenatal care. Even when offered, HIV test acceptance is extremely low (31%), often due to lack of supplies. GAIA Vaccine Foundation implemented a MTCTP program at a Bamako-based CSCOM in 2005. This study evaluates the program at the 12-year point.

Materials and methods: Starting in 2005, local clinic staff received formal training to encourage HIV testing and counseling. Staff systematically offered HIV tests to all women seeking prenatal care. Initially, HIV+ mothers were referred to a city hospital for treatment and GAIA covered transportation expenses, but in 2008, MTCTP treatment was provided directly at the CSCOM. All HIV+ women were provided with ARVs according to local protocols and encouraged to give birth at the clinic, where delivery costs were covered, and infants

received ARVs immediately. Infant HIV testing was performed, initially by antibody testing at 18 months, followed by PCR/Viral load.

Results: Counseling and HIV tests were offered to 18,309 pregnant women over the 12 years and 99% of women accepted. HIV seroprevalence rates among pregnant women at the clinic reduced dramatically from 4.7% in 2005 to 0.3% in 2017. During 12 years, 100% of infants born to MTCTP-adherent mothers were HIV-seronegative. Cost was a significant barrier to effective prenatal care and childbirth for HIV+ mothers-to-be. By providing these services free of charge, GAIA was able to encourage increased participation in prevention services.

Conclusions: This evaluation suggests that MTCTP interventions are feasible in low-resource settings as long as testing supplies are restocked consistently and staff receives adequate training. CSCOMs are the frontline of patient care across West Africa and should be equipped for HIV prevention.



Poster presentations of the 2018 International Symposium on HIV and Emerging Infectious Diseases (ISHEID)

1. HIV and hepatitis issues

P1

The non-prescribed, 'informal' use of antiretroviral medication for HIV prevention among men who have sex with men in South Florida

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Introduction: Antiretroviral medications (ARVs) are used to treat HIV infection. Recent research documents the diversion (i.e., unlawful channeling of regulated pharmaceuticals from legal sources to the informal market) of ARVs by men who have sex with men (MSM) in South Florida. Limited data suggest that some MSM are using ARVs diverted informally (i.e., without a prescription or medical supervision) for HIV prevention.

Material and methods: This qualitative study examined the informal, non-prescribed use of ARVs among 31 HIV-negative MSM with a focus on initiation, use practices, and motivations. Eligible participants were age 18 and older, HIV-negative, and reported informal ARV use. Interviews were coded using descriptive and in vivo coding and themed for analysis.

Results: Participants initiated informal ARV use as a means of protecting each other and ARVs were most commonly shared among friends and sex partners. Informal ARV use practices described by most participants did not cohere with recommended post – (PEP) or pre-exposure prophylaxis (PrEP) regimens. Participants described using a range of medications not approved for PrEP, as well as intermittent or sporadic use of ARVs because of inconsistent access to medication. Motivations for use included condom avoidance, risk reduction, and fear of recent HIV exposure. Participants also described concerns about whether informal ARVs offer sufficient protection against HIV, and exhibited limited knowledge about the proper use of PEP or PrEP.

Conclusions: This study documented informal ARV use among HIV-negative MSM. However, informal use may potentially leave men with less protection against HIV infection, and contribute to HIV transmission, ARV resistance, or adverse effects including drug toxicities, drug interactions, and hypersensitivity reactions. Because ARVs used for PrEP have the potential to prevent HIV infection, healthcare practitioners must consider the informal ARV use and related concerns, including adherence, diversion, and ARV resistance.

P2

Requests from the Sida Info Service hotlines from January to November 2017: do differences exist between African people living in France and those living in Africa?

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Introduction: Recent indicators show that, in France, almost 40% of HIV-positive tests result from African migrants. The WHO African countries focus nearly 70% of people living with HIV worldwide. According to the latest WHO data, about 6% of the adult African population is infected with hepatitis B and 1% with hepatitis C. Within this context, we have examined the concerns of African migrants living in France compared to those from African people living in Africa about hepatitis and HIV.

Material and methods: On one side we analyzed e-mails sent by people living in Africa between January and November 2017 and on the other side calls from African migrants living in France.

Results: 318 emails sent by 212 senders from Africa were analyzed. 62% were written from Africa and 38% from the Maghreb. The average age was 33 years old. 78% were male. 30% of e-mails sent from Africa were received on the address devoted to hepatitis. Nearly 84% came from sub-Saharan countries, while the distribution was equivalent with the Maghreb for e-mails received by the address dedicated to HIV. The questions asked were related to the risks of transmission and healing (35%) as well as requests for medical information (27%). 414 requests from migrants living in France were reviewed. 75% were men and the average age was 35 years old. Among these requests, 186 (45%) came from African migrants. HIV was mentioned for 76% of cases. Risks of transmission, screening and treatments (66%) were mainly interrogated. 82% of requests on hepatitis are from Africa. Comments from listeners raised callers' concerns about marriage or motherhood in a serodiscordant couple.

Conclusions: Results show that people living in Africa more frequently enquire about hepatitis while African migrants living in France ask more about HIV. Insufficient care and limited knowledge of viral hepatitis in Africa despite high prevalence would explain a greater demand from African residents. This suggests the need to expand appropriate programs to combat viral hepatitis in Africa.

P3

Galectin-3 mediates HIV-1 infection: a comparison study between subtype B and CRF07_BC strains

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Introduction: HIV-1 CRF07_BC, prevalent in injecting drug users, has amino acid (a.a) deletions in p6Gag domain. HIV-1 infection is relied majorly on virological synapses (VS) to mediate and bud free virions from infected cells to susceptible target cells. Galectin is the β-galactoside binding lectin. We previously proved that Galectin-3(Gal-3) promoted HIV-1 NL4-3 budding via association with Alix and p6Gag and Gal-3 was localized in membrane lipid rafts. Lipid raft integrity is known essentially for VS formation. The role of Gal-3 in CRF07_BC is still unclear. Here, we elucidate the role of Gal3 in HIV subtype B and CRF_07BC infections.

Material and methods: HIV1CRF07_BC infectious clones were constructed, carrying 7-11 a.a. deletions plus are paired form in the p6Gagdomain. Viral budding kinetics, cell-cell transmission, immunofluorescence and Immunoblotting assays were used to evaluate and compare the effects of Gal3 on viral budding and cell-cell transmission of HIV-1 NL4-3 and CRF07_BC.

Results: Data from cotransfections of pCRF07_BC and pGal3 vectors into 293Tcells indicate that Gal3expression resulted in a slight increase in CRF07_BC viral budding and slower replication kinetics compared to the NL43strain. This phenomenon could be compensated when repairing a.a. deletions in the 07_BCp6Gag. Immunofluorescent staining indicates that Gal3 expression facilitated Gag, GM1 (lipid raft marker) and LFA-1 to have higher colocalization in VSs of CD4 T cells infected with NL4-3 than with CRF07_BC viruses. Results demonstrate that Gal-3 expression promoted higher efficacy in both viral budding and cell-to-cell transmission of CD4 T cells infected with NL4-3 than with CRF07_BC.

Conclusions: This study underscores the importance of a.a deletionsinp6Gag of HIV1 CRF07_BC strains and the impacts on Gal3 that positively regulate function in HIV budding and cell-cell transmitted infections.

P4

Cross-sectional study of drug-use patterns (RADUP) to inform risk-reduction interventions for people who use/inject drugs (PWUD/PWID) in Sri Lanka

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Introduction: Sri Lanka lacks basic harm reduction needs for PWUD/PWID which make them prone to blood born viruses HIV, hepatitis B and C. Hence, this study was conducted aiming at understanding the pattern of drug use among non-institutionalized PWUD and PWID to recommend policies and programs in order to minimize harm to the PWUD/PWID in Sri Lanka.

Material and methods: A cross-sectional study in six high drug use prevalence districts was conducted among 283 PWUD and 174 PWID, recruited through snow-ball sampling and data collected using a structured questionnaire. Moreover, 36 Key Informant interviews (KII) were conducted among PWUD/PWID, Treatment provider, Family member/Spouse/partner and Law enforcement personnel. Ethics clearance was obtained from faculty of medicine, University of Colombo.

Results: Majority (95%) were males in late 30s, while heroin smoking initiated around 19–20 years, injecting starts around 28. 'Peer pressure' and 'curiosity' were reported reasons.

64% of PWID and 73% of PWUD had scores more than 26 on WHO ASSIST.

91% PWIDs reported injecting heroin. 83% of PWID injected 'daily' with 64% injecting '2–3 times/day'. 85% reported sharing 'ever', while 64% reported 'last one month' and 68% reported sharing in the first instance of injecting. 52% of PWID and 38% of PWUD reported unprotected sex with sex workers.

More than 90% had been apprehended by police and majority (84% PWID and 78% PWUD) had been to jail.

KII highlighted deep seated prejudices, widespread stigma and discrimination faced by PWUD/PWID and misconceptions regarding harm reduction.

Conclusions: Triple burden of risk; PWUD are at risk of transition to injecting, and high prevalence of risky injecting and sexual practices identified. Criminal justice and poor access to addiction treatment with non-existence of harm – reduction interventions are seen.

Legal and Policy reforms with services promoting civil society in the decision-making, advocacy for Opioid Substitution Treatment and harm-reduction interventions are important.

P5

Factors associated with deprivation according to the EPICES score in older HIV patients: results of the VISAGE French study

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Introduction: People living with HIV (PHIV) grow older and accumulate multiple health problems earlier than the non-infected. Moreover, as the burden of social inequalities in health is highlighted, the individual evaluation of social conditions with a composite, synthetic, easy to apply tool became an important challenge. Our study, conducted by the VISAGE group, a French multidisciplinary study group focusing on elderly PHIV, aimed to assess the prevalence of deprivation and his relationship with health indicators.

Materials and methods: This 18-months multicenter cross-sectional study carried in 2014 had involved PHIV >=50 years, followed-up in HIV dedicated hospital medical units in France. Deprivation (ES >=30.17) was measured with the EPICES score (Evaluation of Deprivation and Inequalities in Health Examination Centers, ES). Besides classical HIV data, we collected: sex, age, body mass index, comorbidities, Fried five frailty markers, socioeconomic and behavior factors and geriatrics assessment.

Results: 494 PHIV >=50 completed ES, means age 58.5 +/– 7.0 years, 72.9% men. Prevalence of deprivation was 49.0%. The main deprived item was the lack of social care (88.9%). Multivariate logistic analysis, comparing deprived (n=242) and non-deprived (n=252) PHIV, showed that alcohol and drug uses (OR: 4.07), risk of depression (OR: 3.59), chronicle pulmonary disease (OR: 3.10), hepatitis C (OR: 1.96), felt chronic pain (OR: 1.11) were significantly ($p<.05$) linked to deprivation.

Conclusions: It would be crucial to measure deprivation more routinely with synthetic and validated tools during the follow-up of PHIV. Targeted comprehensive care procedures, involving social and psychological supports, need to be implemented urgently to reduce the burden of deprivation. Health professionals need to be attentive to the pain status of older PHIV and to those with chronic pulmonary diseases. They should refer deprived patients, especially those with alcohol misuse and mental distress, to specific supports in and out hospital.

P6

Knowledge, attitudes and practices of young soldiers to sexually transmitted infections and HIV/AIDS

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Introduction: Human immunodeficience virus (HIV) infection affects mostly young adults when they are most economically productive and often have a family charge. The socioeconomic impacts are very severe: reduced life expectancy reduced economic activity and increased charge on health systems. Our study aim was to improve knowledge, attitudes and practices regarding sexually transmitted diseases (STDs) and HIV.

Material and methods: We conducted a cross-sectional study of knowledge, attitudes and behaviors using an anonymous self-administered questionnaire of 5032 young recruits newly recruited soldiers in 2009 and 2010.

Results: The participants of our study were predominantly male (96%) and 96% were single.

More than 90% of the participants had knowledge of STDs. The most cited was AIDS in 56.7% of cases. Television and radio were leading all sources of information on STDs 30%. 94% of participants said that sexual intercourse is a risky behavior for STD transmission. 60% of participants knew the HIV transmission pathways. 89% of participants said that persons who have sex with anyone are a high-risk person. 80% of participants knew method of STDs prevention and the use of Condoms mentioned by 82% of participants. Urethral discharge as a sign of STD was mentioned in 58% of cases.

Television and radio were leading all sources of condom information 57%. Alone (without any help) came at the top of all sources of knowledge of condom use in 20% of cases.

Conclusions: High levels of knowledge about STIs/HIV/AIDS have been found, but despite this good knowledge, risk behaviors remain high.

P7

Diagnosis of tuberculosis in patients infected with HIV from urine: experience of Ngaba (CHME, Ngaba) mother and child referral hospital in Kinshasa, Congo

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Introduction: To evaluate the contribution of the diagnostic technique for tuberculosis in HIV-infected patients from urine.

Material and methods: Cross-sectional study carried out between May and November 2017 among HIV-infected people suspected of having tuberculosis followed by CHME, Ngaba of Kinshasa, Congo.

The diagnosis of tuberculosis was made by looking for bacterial antigen lipoarabinomannan through urine (TB lam) and genexpert MTB/RIF from sputum.

Results: Out of 132 HIV-positive patients suspected of having tuberculosis, of whom 52% were referred for treatment and general poor condition, 92 were female (69.6%) and the average age was 40.7 years.

The detection of Ag Lam in the urine was positive in 88 presumed TB patients (66.6%) whose CD4 count was 174 c/mm^3 (3–699)

TBM/RIF genexpert performed on sputum of presumed TB patients with positive Ag LAM returned positive, 90% of cases (n=10), the only case (n=1) with positive genexpert in whom Ag LAM was negative had resistance to rifampicin.

Conclusions: The TB LAM test improves the diagnosis of tuberculosis, especially in HIV-infected patients whose clinical condition is advanced and the production of difficult sputum. The use of this test not only allowed a rapid diagnosis of tuberculosis but also promptly start anti-tuberculosis treatment

P8

HIV epidemiology in Tunisia: is it the same for Tunisians and migrants?

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Introduction: Despite the scale-up of the Human Immunodeficiency Virus (HIV) response, the evolution of its epidemic among the overexposed populations in Tunisia is expanding. Scarcity in data related to these individuals, including migrants, is a major hindrance to the fight against HIV.

We aimed to describe the socio-epidemiological features of HIV among both nationals and migrants living in Tunisia.

Materials and methods: In a retrospective observational study, we collected socio-demographic and epidemiological data for all newly HIV diagnosed patients enrolled in care (1983–2016) in the Infectious Disease Ward of La Rabta Hospital, Tunis.

Results: Among 1,151 HIV patients included (median age =34.04 years), 85.49% were Tunisians and 14.51% were migrants. The sex-ratio varied by nationality group (Tunisians M/F=1.97, migrants M/F=0.91). Most migrants came from African countries; 34.13% from Libya and 56.28% from Sub-Saharan Africa. About two thirds of patients lived in the capital area (65.61% of Tunisians, 64.07% of migrants). Unemployment represented 37.88% while sex work was reported in 20 cases only (1.86%). Most students enrolled (n=63) were migrants (66.66%), mainly sub-Saharan Africans (90.48%). Heterosexual contact was the main route of HIV transmission (52.40% of Tunisians, 68.79% of migrants) followed by drug injection (27.48% of Tunisians, 19.86% of migrants). Acquired Immunodeficiency Syndrome (AIDS) was found in 62.06% (63.33% of Tunisians, 54.55% of migrants) and initial CD4 cell count was lower than 200 c/µl in 57.56%. hepatitis B surface antigen (HBs-Ag) was positive in 11.35% whereas testing for hepatitis C antibodies (anti-HCV) revealed 30.00% of reactivity. Loss to follow-up after diagnosis was reported in 28.58%, especially among migrants (47.90%). Mortality rate was 25.46%; 90.58% of deaths were AIDS-related.

Conclusions: The HIV epidemiology in Tunisia varies widely between locals and migrants. Thus, an effective fight against HIV should take into account these differences and plan targeted actions.

P9

Epidemiological characteristics of HIV-infected in people in Ukraine

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Introduction: Despite of a significant progress today, Ukraine is on the first place among the European countries by the number of people who have human immunodeficiency virus (HIV). The death-rate from AIDS is still high and requires further analysis.

Materials and methods: Epidemiological and statistics analysis.

Results: According to SI 'Ukrainian center of control of socially dangerous diseases of Ministry of Health of Ukraine', the highest levels of HIV infection are registered in the south-eastern regions of Ukraine, which include Odesa region (114.8 per 100 thousand people), Dnipropetrovsk region (104.7), Mykolaiv region (92.5), Donetsk region (83.9). The highest growth rates of the incidence of HIV infection, compared with the year 2012, were registered in Lugansk region (+ 24.7%), Sumy region (+ 22.8%), Odesa region (+ 19.3%) and Zaporizzhia region (16 9%), which is a prognostic sign of rapid development of HIV infection in these regions of the country. Western regions remain areas with low and medium levels of incidence of HIV infection. Among the examined respondents concerning to the ways of infection foremost is sexual HIV transmission (heterosexual) – 1,205 persons, at the second place is artificial parenteral usage of injecting drugs – 739 persons, and at the third place is homosexual – 49 persons.

Conclusions: After analyzing the results, it is need to pay attention and conduct public educational activity in regions, where it was registered the largest number of AIDS patients and where the highest rates of distribution of this disease are presented. It is also need to pay attention to the leading ways of transmission that can significantly affect on the future of dissemination of the disease.

P10

HIV-1 subtypes distributed among the heterosexsual population in Bulgaria

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Introduction: From 1986 till the end of 2017, a total of 2,691 HIV/AIDS cases were diagnosed in Bulgaria into several transmission groups. The biggest group were heterosexuals (HET) – 1347 (50.06%). The aim of the study was to determine HIV-1 diversity and to trace the geographic source and countries of introduction of the most prevalent clades in the general HET population.

Materials and methods: We analyzed 322 HIV-1 *pol* gene sequences from HET. HIV-1 subtypes were classified using Internet subtyping tools and manual phylogenetic analysis with ML in FastTree. The global phylogenetic trees of the most prevalent HIV-1 subtypes included Bulgarian and all accessible sequences of the respective subtype from the GeneBank. Phylogenetic trees were displayed with FigTree v.1.4.2 program. Recombinant analyzes were performed using bootscan with SimPlot.

Results: Our epidemiological data indicated that: 191 (59.3%) individuals in the study were men, 131 (40.7%) women, 254 (78.9%)

were between 20–44 years old with mean age 33.4 years, 47/322 (14.6%) were migrants, including 5 foreigners diagnosed with HIV-1 in Bulgaria and 42 Bulgarian citizens infected abroad. The prevalent HIV-1 subtype was defined as subtype B 125 (38.8%), followed by CRF01_AE 63 (19.6%), subtype C 22 (6.8%), CRF02_AG 21 (6.5%) and a variety of more than 30 other HIV-1 subtypes, circulating and unique recombinant forms. The global phylogenetic analysis of the prevalent subtypes: B, CRF01_AE and CRF02_AG indicated that they have been introduced in Bulgaria from different countries of the world with possible overflow from different transmission groups.

Conclusions: We found high genetic diversity among HET with domination of non-B subtypes and phylogenetic link between sequences isolated in Bulgaria and other countries around the world from different transmission groups. Our results indicated that providing of molecular-epidemiological surveillance of HIV-1 diversity among different transmission groups is of importance to better control HIV-1 epidemic in Bulgaria.

P11

Misuse of PrEP and atypical HIV seroconversion: about a case

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Introduction: Pre-exposure prophylaxis (PrEP) using tenofovir/emtricitabine is highly effective for preventing HIV infection. The risk of PrEP misuse and eventual interference with HIV seroconversion should be documented.

Materials and methods: We report the case of a 28-year-old MSM who has frequent unprotected sex and recreational drug use (chemsex). He attended a STDs prevention center following diagnosis of gonorrhea in a sexual partner. He presented with weight loss (–2 kg), asthenia, febricula, lymphadenopathy, alopecia and diarrhea since 3 weeks. Last available HIV negative serology was five months old.

Results: HIV-1 seroconversion was confirmed on positive serology (ratio 87.51, threshold >1.25) with negative p24 antigen (<3 pg/ml). Western blot displayed only 3 positive bands: p18, p24 and gp16 leading to the diagnosis of a primary HIV infection. However, HIV plasma viral load was low after two different tests (56 copies/mL with VERIS Beckman Coulter test and 1860 copies/mL with the ANRS/Biocentric assay).

These discordant data led us to suspect an undeclared PrEP. Indeed, patient declared a self-medicated PrEP QD for one month without prior HIV-testing. HIV genotyping found a wild type HIV-1 B subtype. A single-tablet formulation with integrase strand transfer inhibitor was preferred to a non-nucleoside reverse transcriptase or protease inhibitor based-regimens in order to avoid drug interactions with recreational drugs reported by patient.

Conclusions: This case illustrates that: 1) frequent HIV testing is suitable for PrEPs users, especially when high risk behaviors are documented; 2) 'Wild' PrEP use should be a usual suspect whenever a discordance between serology and virology is observed. Hence, information and close monitoring of putative PrEP users should be provided in order to avoid misdiagnosis.

P12

HIV/AIDS in the Republic of Belarus

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Introduction: At present, the Republic of Belarus has a consistently high increase in new HIV infections. Over the course of 2015 and 2016, more than 4,600 new HIV/AIDS cases were identified. As of October 1, 2017, there were 23,963 HIV cases registered in the country.

Materials and methods: A serum/plasma samples were obtained from patients from different regions of the country and 696 nucleotide sequences over the of gag-pol HIV-1 genes. Multiple alignment of nucleotide sequences was carried out using the algorithm ClustalW and MAFFT. Phylogenetic trees were constructed using the algorithm ML (maximum likelihood) in the programs PHYML (Phylogenetic maximum likelihood), and GARLI (Genetic Algorithm for Rapid Likelihood Inference), with the model of the replacement of nucleotides GTR + I + G.

Results: There were 157 (22.6%) sequences from the city of Minsk, 150 (21.6%) from the Minsk region, 152 (21.8%) from the Gomel region, 114 (16.4%) from the Brest region, 51 (7.3%), from Mogilev – 42 (6.0%), from the Vitebsk region – 30 (4.3%). 412 (59.2%) of the patients were male and 284 (40.8%) were women. 325 (46.7%) men and 117 (16.8%) women were infected parenterally with the co-administration of drugs, 167 (24%) women and 71 (10.2%) male sexually infected with heterosexual intercourse and 16 (2.3%) of men were MSM. 658 (94.5%) of HIV-infected patients were carriers of HIV_1 A6 subtype, 15 (2.2%) – B, 3 (0.4%) patients – G and C subtypes, 11 (1.6%) – CRF03_AB, 4 (0.6%) – CRF02_AG and 2 (0.3%) – CRF06_cpx. The epidemic process in the territory of the Republic of Belarus is mainly supported by small local outbreaks associated with different variants of HIV A6 subtype.

Conclusions: On the territory of the Republic of Belarus, the epidemic process for HIV infection is supported by 'local' variants of HIV-1 subtype A6, there are separate cases of importation of the virus from outside the country. HIV infection has gone beyond the risk groups and is actively spreading in the population of sexually active individuals.

P13

A case of acute multidrug resistant HIV-1 infection with acquired immunodeficiency syndrome

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Introduction: Transmission of multidrug resistant HIV, development of AIDS during acute HIV infection and HIV antibody (Ab) seroreversion are uncommon events. Here, we report a case of acute multidrug resistant HIV-1 subtype B infection, who developed rapid deterioration and opportunist diseases. Besides, HIV antibody seroreversion was rapidly observed after early initiation of antiretroviral therapy (ART).

Materials and methods: A previously healthy 32-year-old man having high-risk sexual contacts, developed Pneumocystis jiroveci pneumonia, oesophageal and oral mucosal candidiasis and a severe herpes zona infection associated with a cachectic syndrome. A reactive fourth-generation combination antigen/Ab HIV-test led to further analysis including immunoblot assays, RT-PCR and genotyping.

Results: HIV viral load was at $\log_{10}$ 4,9 copies/mL. Patient CD4 counts were 4 cells/mm^3. Regarding AIDS indicator conditions and CD4 cell count, patient was classified in category C3 of CDC classification. Nevertheless, seroconversion was incomplete. Immunoblot analysis showed Ab positivity against gp41, p24 and p17 but remained negative for gp120 and p31 specific Ab, strongly suggesting early HIV-1 infection (Fiebig IV). Genotyping confirmed infection by HIV-1 subtype B and showed D67N, T215C, T69D mutations on Reverse Transcriptase that all together may confer reduced susceptibility to NRTI. Genotyping of the protease revealed many mutations among which M46L, A71V, V82A, resulting in reduced susceptibility for all protease inhibitors except darunavir. No resistance mutation was revealed by genotyping Integrase. ART by truvada, darunavir/r and dolutegravir was initiated. In two weeks HIV RNA was under 40 copies/mL and a seroreversion with only persistence of anti-gp41 Ab on immunoblot analysis was observed.

Conclusions: We reported here a rare case of AIDS during a multidrug resistant HIV-1 acute infection. The severity of this case reinforces the need to prevent HIV-1 transmission in populations considered at high-risk such as MSM.

P14

Progress towards the 90-90-90 target: review of status and methodology of reported National HIV Care Continua

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Introduction: The progress towards the UNAIDS 90-90-90 target are increasingly being reported, especially at national level. However, in many cases, different data sources are being used to calculate each of the 90-90-90. Comprehensive reporting in the public domain of national care continuum drawn from program data is necessary for tracking progress towards the 90-90-90 target.

Materials and methods: We searched PubMed, UNAIDS country progress reports, WHO/UNAIDS reports, national surveillance and program reports, PEPFAR Operational Plans, and conference presentations/abstracts for the 'latest available and comprehensive' national HIV care continua in the public domain. We defined comprehensive as including at least 'On antiretroviral therapy (ART) and Viral suppression' data drawn from national program data. We ranked the described methods for indicators to derive high, medium and low-quality continuum.

Results: For 2012–2017, we identified 87 national care continua, representing 28 million (77%) of the 2016 global estimate of people living with HIV (PLHIV). Only six continua (2% of 2016 global HIV burden) were high quality, using standard surveillance methods to derive an overall denominator and program data from national cohorts for estimating steps in the continuum. In the 87 countries, the average proportion of PLHIV on ART was 49%, and Virally suppressed was 40%. Six countries have already achieved the 90-90-90 target. There were significant variations in methods used for national continua and lack of availability of complete continua, especially data on first 90.

Conclusions: National continua of care are increasingly available in the public domain but there is wide variation in methods and data sources for determining progress towards 90-90-90. National care continua from Sub-Saharan Africa were limited in number. A standardized public domain monitoring, evaluation and reporting approach could improve the use of scarce resources to achieve 90-90-90 through improved transparency, accountability and efficiency.

P15

Biological hepatic markers of inflammation and fibrosis following durable sustained virological response to direct acting antiviral agents in HIV/HCV co-infected patients: preliminary results from the cohort driven by the CoReVIH at the University-Hospital of Clermont-Ferrand, France

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Introduction: Direct-acting antiviral agents (DAAs) against hepatitis C Virus (HCV) infection is a revolution, achieving, in patients with HIV/HCV co-infection, a rate of sustained virological response (SVR)>95%. The regression of hepatic fibrosis following durable SVR in this subgroup is not clearly documented. We report preliminary results on the evolution of biomarkers of hepatic inflammation and fibrosis in HIV/HCV coinfected patients treated with DAAs.

Materials and methods: A cohort of PLWHIV is carried out by the Infectious Diseases Unit at the University Hospital in Clermont-Ferrand, France. Over the 2010–2017 period, 42/130 patients with a HIV/HCV co-infection received DAAs: 31M, median(IQR)age: 50(46–53)y, HCV transmission was injection drug use (50%), heterosexuality (26%), HSM (17%). HCV subtypes were mainly 1a(22), 3a(7) and 4a(6). Before DAAs, 7 had marked fibrosis (F3), 16 had cirrhosis (F4) according to Actitest-Fibrotest. DAA combinations were sofosbuvir-based regimens according to AFEF and EASL consensus. The evolution of hepatic inflammation was assessed by median(IQR) ALAT and ASAT values and hepatic fibrosis by APRI and FIB-4 scores before and after DAAs.

Results: All patients (but one) had a SVR after DAAs. No relapse, no CHC, no HBV reactivation but one HCV re-infection and no hepatic failure with clinical issues were identified after DAA therapy (median follow-up (IQR): 27.6(12.9–37.4) months). Among 23/42 patients with a score F3/F4 before DAAs, 19 had a median (IQR) SVR achieving 18.5(9.9–30.1) months (4 F4 patients were under treatment). Initial hepatic inflammation assessed by median(IQR) ALAT and ASAT levels decreased respectively from 74(51–91) to 31(24–35) and from 45(37–51) to 26(19–36) UI/ml. Consistently APRI score decreased from 0.82(0.51) to 0.35(0.27–0.63) and FIB-4 score from 2.22(1.3–6.7) to 1.23(1.1–2.9).

Conclusions: A durable SVR folllowing DAAs combination was associated with a significant decrease of biological markers of hepatic inflammation and fibrosis in F3/F4 HIV/HCV co-infected patients.

P16

European HIV and Hepatitis Testing Week: an opportunity to increase HIV and hepatitis C awareness in testing

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Introduction: There is an estimated 60,162 infected people with hepatitis C (HCV) in London of which 1,791 people are affected in the London Borough of Waltham Forest (LBWF). We explored the impact of a coordinated multiagency approach, government health agencies and local HIV&HCV Non – governmental organisation (NGO) on increasing knowledge about HIV&HCV, and also on uptake of HIV&HCV testing during the European HIV and Hepatitis Testing Week in LBWF.

Materials and methods: Three main activities were evaluated: educational activities aimed at increasing HIV&HCV knowledge, transmission and testing among Health Care Professionals (HCP), plus school-based assemblies and workshops; HIV&HCV testing: hospital stalls, mobile bus and at local council premises; media promotion of the campaign: press releases, hospital and Council websites.

Results: 30% completed the questionnaires.139 of 142 HCP attended hospital-based lectures, 3 of 142 poorly attended the community-based HCP talk. The lectures improved attendees' knowledge, 16% gave correct answers to post lecture questions. 764 pupils received school-based talks on HIV&HCV transmission and testing. A total of 112 self-testing kits for HIV&HCV were given out; 82 within hospital, 30 on the mobile bus, of which 52 (46%) men and 60 (54%) women, aged between 19–49 years. An additional 46 kits were given out at the local council by the NGO. Project was covered by 3 local newspapers and 1 radio-station.

Conclusions: Joint partnership between community and hospital-based services was feasible and productive, reaching 1,018 individuals. Hospital-based educational activities and uptake of self- testing kits for HIV&HCV was greater than similar activities in community-settings. Knowledge gaps in HIV&HCV transmission still existed, even among hospital staff. Knowledge levels increased, with potential benefit to patients. More work is required to understand interventions that can impact engagement in community settings.

P17

HIV and hepatitis C virus infections and associated risk behaviours among injecting drug users attending a syringe service program: a cross-sectional study in Tunis, Tunisia

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Introduction: People who inject drugs (PWID) frequently engage in high risk behaviors exposing them to human immunodeficiency virus (HIV) and hepatitis C virus (HCV) infection. This study aimed to assess injection and sexual risk behaviors among a sample of PWID attending a syringe service program (SSP) in Tunis, Tunisia.

Materials and methods: A cross-sectional sample of 113 PWID attending SSP for HIV prevention in Tunis was selected from September 2017 through February 2018. All consenting participants completed a questionnaire-based interview followed with tests for anti-HIV and anti-HCV.

Results: Mean age was 39 years (IQR 32–47) and mean duration of injection drug use was 11 years (0–29). Most participants were men (96%), unemployed (69%), and had less than a high school diploma (97%). The prevalence of HIV and HCV infection was 10% and 80% respectively. During the past 12 months, 45% reported receptive syringe sharing and 71% reported re-using syringes. PWID with longer duration of injection drug use (>5 years) were more likely to be HCV-infected (87% vs. 54%; p<0.001). HCV-infected PWID were more likely to engage in receptive syringe sharing compared with uninfected PWID (52% vs. 22%; p=0.01). Having non-regular sexual partners during the past 12 months was reported by 35% of PWID, and 77% of these had not used a condom consistently with this type of partners. Younger PWID (≤35 years) were more likely to have non-regular sexual partners compared with older PWID (51% vs. 26%; p=0.009).

Conclusions: High-risk behaviors are very frequent among PWID attending SSP in Tunis. Coupling expanded SSP coverage with HIV/HCV prevention education could reduce risky behaviors and prevent new infections among current PWID.

P18

The levels of hyaluronic acid in different HIV-infected patient groups

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Introduction: Chronic hepatitis C (HCV) is the most common coinfection in HIV infected patients, affecting more than half of HIV patients. One of serum biomarkers for detection of hepatic fibrosis is hyaluronic acid (HA), which increase in serum is enhanced by development of liver fibrosis. The aim of the study was to evaluate the level of HA in HIV infected patients with and without HCV, and possible coherence of HA with CD4 cell count, HIV RNA load, HIV stage and existing antiretroviral therapy (ART).

Material and methods: Totally 100 HIV infected patients were enrolled in the study and divided in groups depending on presence of HCV: 56 patients with HCV and 45 without HCV. Additionally, patients were grouped according to HIV stage, presence of ART. Statistical analysis was performed by using IBM SPSS 23.0 nonparametric methods.

Results: Statistically significant difference of HA levels was found between groups with HCV (M=52.01±66.63 ng/ml) and without HCV (M=21.40±22.65 ng/ml), p=0.003. There was no statistically significant correlation between HA level and CD4 cell count and between HA and HIV-RNA load. The level of HA was significantly lower at HIV stage A in comparison with stage B, U=99.0, p<0.05, and stage C, U=362.5, p<0.01. There were no significant differences of HA levels between stage B and stage C, U=235.5, p=0.92. Statistically significant difference of HA levels was found between NNRTI therapy group and no therapy group (U=351,50, p<0,05)

Conclusions: The results obtained from our study does not demonstrate any influence of CD4 cell count and HIV RNA viral load on hepatic fibrosis marker- HA, though HIV stage B and C is associated with higher HA levels. Patients on ART containing NNRTI show lower HA levels, this finding suggests that NNRTI has possibly protective effect on development of liver fibrosis.

P19

Plasma levels of bacterial LPS and endotoxin antibodies in HIV mono-infected and co-infected with HCV patients

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Introduction: HIV infection is associated with increased intestinal permeability and consequent microbial translocation that contributes to systemic immune activation, enhancing HIV disease progression. It is considered that liver disease in HIV patients could contribute to enhanced immune activation.

We aimed to analyze differences of bacterial Lypopolysaccharide (LPS) levels and Endotoxin core antibodies (EndoCab) in HIV monoinfected and coinfected with HCV patients, and their relation to CD4 count and treatment.

Materials and methods: Case control study included 159 HIV patients. Patient plasma samples were measured for LPS, EndoCab IgA, IgM and IgG levels. Relation to CD4 cell count and HIV treatment was analyzed.

Results: The study group consisted of 66 (41.5%) HIV/HCV coinfected and 93 (58.5%) HIV monoifected patients.

EndoCab IgA level was higher in HIV/HCV group: Me=35,09 U/ml (IQR=23,64–117,35) vs HIV group Me=28,77 U/ml (IQR=16,79–50,66), but statistically not significant, p=0,085. EndoCab IgM levels were higher in HIV/HCV Me=18,55 U/ml (IQR=12,91–52,34) vs HIV group Me=16,35 U/ml (IQR=13,97–21,14), but not statistically significant, p=0,312. No differences were found between groups in regard to LPS and EndoCab IgG.

In the total study group negative correlation was found between CD4 count and EndoCab IgG (r_s=–0,314, p=0,005); weak and statistically not significant correlation between CD4 and EndoCab IgA (r_s=–0,160, p=0,156). In HIV/HCV group negative correlation was found between CD4 and EndoCab IgG level (r_s=–0,497, p=0,004); and between CD4 and EndoCab IgA (r_s=–0,339, p=0,05). No statistically significant correlations between CD4 count, LPS and EndoCab antibodies was found in HIV monoinfected group. No effect of HIV treatment was found on LPS or EndoCab levels in any of study groups.

Conclusions: Increased levels of EndoCab antibodies as well as correlation with CD4+ cell count in HIV/HCV group could suggest enhanced bacterial translocation and systemic immune activation in HIV/HCV coinfected patients.

P20

Epidemiological and economic evaluations according to DAA treatment access: an interim evaluation based on PITER cohort data

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Introduction: The aim of this work is to describe the changes in the epidemiologic pattern of HCV patients in care in Italy from the DAAs introduction (2014) to the universal access (2017) and to evaluate the net payback period to recover the initial investment on DAAs treatment from the National Health System (NHS) perspective.

Materials and methods: A multistate Markov model of HCV liver disease progression was developed. Fibrosis stage distribution, treatment efficacy and direct costs according to each health state derived from PITER cohort data. PITER is an ongoing cohort of 10,314 consecutively enrolled patients from 90 hospital centers across Italy linked to care for chronic HCV infection in the period May 2014–September 2017, who are not on HCV treatment at enrolment time. The payback period was defined as the number of years required to recover the NHS investment on DAA treatment. A 20-year time horizon and three different enrolment periods which cover the full evolution of DAA access in Italy, since 2014, were considered.

Results: In 2014–2015, PITER cohort study enrolled 5,158 HCV patients (52% in F0 – F2 stage); in 2016, 4,090 patients (41% in F0-F2 stage) and in 2017, 1,066 patients (70% in F0-F2 stage). Mean age: 58+—12 years, 55% were male; genotype 1b was prevalent (55–60%). Standardising the real-life data of the three enrolment periods in 1,000 patients, the investment on DAAs was considered 15 million euros during 2014–2016 and 9 million euros in 2017. For each of the 2014–2015, 2016 and 2017 enrolment periods the

estimated payback periods were 11.5, 10.5 and 8.5 years respectively. The total cost saving after 20 years was 24.0, 29.9 and 24.7 million euros for 1,000 patients treated during 2014–2015, 2016 and 2017 respectively.

Conclusions: The epidemiologic pattern of patients in care in Italy has changed following the universal access to DAA treatment. This study could be a useful tool for public decision-makers in understanding how HCV epidemiological profiles influence the HCV liver disease economic burden.

P21

Performance evaluation of new automated VIDAS anti-HEV immunoassay tests

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Introduction: Our objective was to evaluate the performance of the new bioMerieux diagnostic tests, VIDAS® Anti-HEV IgM and IgG. As HEV circulates as 4 different genotypes, both VIDAS® Anti-HEV assays were evaluated for the detection of antibodies against various HEV genotypes on samples from European and non-European patients.

Materials and methods: Two VIDAS® Anti-HEV IgM and IgG prototypes were developed using HEV ORF2 and/or ORF3 antigens. Sensitivity and specificity of each assay was determined by testing European samples with HEV infection characterized by HEV RNA PCR and CE-marked assays. 459 samples from immunocompetent and immunocompromised patients were tested with both prototypes. Cross reactivity were assessed using samples that tested positive for hepatitis A, B or C, dengue, plasmodium falciparum, CMV, EBV or rheumatoid factor. 156 samples from China and 989 samples from Burkina Faso, were tested with both VIDAS assays.

Results: For Anti-HEV IgM assay, the sensitivities in immunocompetent patients were: 94.7% (ORF2), 96.5% (ORF2/3), and 96.5% (Wantai); and in immunocompromised patients were: 76.1% (ORF2 and ORF2/3), and 78.3% (Wantai). Specificities were 95.8/96.2% (ORF2 prototype) and 97.9/98.1% (ORF2/3 prototype) for immunocompetent/immunocompromised patients. The 2 VIDAS® Anti-HEV IgG prototypes demonstrated an excellent performance for both prototypes (Abravanel et al, J Clin Virol 2017). Limited cross-reactivity towards related pathogens were observed for both VIDAS® Anti-HEV IgM and IgG assays. Sensitivity studies performed with non-European samples demonstrated similar sensitivity and specificity of VIDAS® Anti-HEV IgM and IgG compared with European samples.

Conclusions: Sensitivity and specificity performances of VIDAS® Anti-HEV IgM and IgG are comparable to CE-marked tests and suitable for the detection of antibodies anti-HEV in European and non-European populations.

P22

Hepatitis delta in patients with resolved hepatitis B virus infection

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Introduction: Acute dual hepatitis B and D coinfection may be clinically severe, but generally is self-limited with development of antibodies and clearance of both viruses. In contrast, HDV superinfection of HBsAg+ carriers generally progresses to chronicity. The diagnosis of HDV infection is generally based on the demonstration of HDV antibodies (HDV-Ab) in HBsAg+ individuals. Serum HDV-RNA can be recognized in most chronic HBsAg+ carriers with reactive HDV-Ab. Information on the rate and clinical relevance of HDV-Ab in persons with markers of resolved HBV infection is rather scarce. Presumably, this population should reflect past acute dual coinfection episodes. However, some of these individuals may present with elevated liver enzymes and/or significant hepatic fibrosis, opening the question for the existence of HBsAg-seronegative occult HDV infections.

Material and methods: Specimens with markers of past HBV infection, namely positive anti-HBc and/or anti-HBs using commercial tests, were selected. Individuals with HBsAg+ were excluded. Serum HDV-Ab was tested using a commercial ELISA. In HDV-Ab reactive samples, serum HDV-RNA was tested by PCR.

Results: A total of 406 sera with markers of resolved HBV infection were identified. Twenty (4.9%) were HDV-Ab+ but none was HDV-RNA+. Two thirds of specimens had been collected from injection drug users. Overall, 57 (14%) were HIV+ whereas 203 (50%) were anti-HCV+. All HDV-Ab+ patients but one were HCV-Ab+. Twelve had been successfully treated for chronic hepatitis C and 2 had cleared HCV spontaneously. Four subjects displayed elevated liver enzymes, of whom 3 had chronic hepatitis C and one admitted high alcohol intake.

Conclusions: Active hepatitis delta was not recognized in patients with HDV-Ab+ and markers of past HBV exposure. These results reinforce the notion of a self-limited outcome following dual acute HBV and HDV co-infection, supporting the current policy of excluding hepatitis delta only in HBsAg+ individuals.

P23

Trend and mapping of hepatitis C virus among Tunisian soldiers (2003–2012)

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Introduction: Viral hepatitis is the seventh leading cause of death in the world, half of it is attributed to the hepatitis C virus (HCV).

In Tunisia, the impact of HCV is considerable. In 2006, more than two-thirds of HCV carriers would progress to cirrhosis and hepato cellular carcinoma.

The aim was to describe the epidemiological evolution of the carriage of anti-HCV antibodies in a population of soldiers and to establish a map of HCV in Tunisia.

Materials and methods: We realised a seroprevalence study, between 2003 and 2012, based on data on the anti-HCV antibody test carried out for all soldiers during national service or during military recruitment.

The study was comprehensive including all young, male, apparently healthy and from all parts of Tunisia. The screening was carried out by third generation and fourth generation ELISA tests then validated by Immunoblot.

Results: Our population was 175,322 young male adults. The average age was 22.59±2.26 years. They were under age 25 in 82.32% of cases. The average of the subjects screened was 17,532 each year. The detected prevalence of carriage of anti-HCV Ab was 0.11%.

From 2003 to 2012, the lowest tested prevalence was 0.07% in 2004 and the highest was 0.17% in 2011. There was no significant increase or decrease in the prevalence of Anti-HCV Ab during the study period when measuring evolution trends by the Spearman correlation test ($r=0.857$, $p=0.564$).

The region with the highest 'estimated prevalence' of carriage of anti-HCV Ab was North-West with a figure of 0.22%. Central-East and South-East had the lowest estimated prevalence at 0.04%.

Conclusions: Absence of a decline in HCV prevalence rates was observed. We recommand more prevention such as the reinforcement

of actions on the modes of transmission of the virus, the systematization of the screening for every personpre senting a risk factor and the development of a program of taking in charge of people infected with HCV.

P24

Genotyping and molecular characterization of hepatitis B virus in Belarus

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Introduction: The successful implementation of the large-scale vaccination campaign against hepatitis B (HBV) in the Republic of Belarus envisaged by vaccinations started from 2000 has significantly reduced the incidence of acute HBV by more than 6 times. At the same time, the significantly reduced incidence of acute HBV in the country's population did not correlate with the incidence rate of chronic HBV (CHBV). An equally important component of the epidemiological surveillance is the pathogen genetic variability evaluation with the results enabling to identify the dominant gene variants in the country and estimate the contribution of each of them to the epidemiological process development.

Materials and methods: 600 nucleotide sequences in the HBV genome P region have been analyzed, collected during 2004–2015 years.

Results: HBV genetic heterogeneity studies at the territorial level in 2004–2015 have demonstrated that the hepatitis B virus population included two main genotypes: D – 80.0% and A – 18.6%. For the first time in the country, C (0.8%), B (0.2%) genotypes and recombinant forms of HBV – A/D/C and D/A. D genotype included D1 (16.0%), D2 (39.8%), D3 (23.3%) and D4 (0.8%) HBV genotypes. Genotypes A, C and B are represented by only one genotype – A2, C2 and B4, respectively.

A comparative analysis of the HBV gene variants occurrence in patients with the infection different risk factors showed that A and D genotypes of HBV in these groups had been detected with almost the same frequency. At the same time, at the subtypic level, a number of differences have been established for D genotype. In the risk groups for HBV infection associated with medical care and sex/community-acquired contacts, as well as with unidentified risk factors, D2 (59.9%), D3 (37,0%) and D1 (25.4%) HBV subtypes were detected.

Conclusions: Our findings suggest that D and A genotypes of HBV are the most common among Belarusian patients with CHBV infection, but not among injection drug users where the common subtype is D2.

P25

Behavior and attitude of adolescents and young people living with HIV in Kinshasa (Democratic Republic of Congo)

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Introduction: To evaluate the behavior, attitude and sexual practice of adolescents and young people infected with HIV.

Materials and methods: Cross-sectional and descriptive study conducted between January and June 2017 among adolescents and young people living with HIV, aged between 10 and 24, followed at the Kalembelembe pediatric hospital in Kinshasa/DRC. A standardized, closed questionnaire was submitted face-to-face to adolescents and young people participating in the survey.

Results: Of 94 participants whose average age was 20 years with a sex ratio of 0.4. It was noted that 4.3% were between 10–14 years old, 40.4% between 15–19 years old and 55.3% between 19–24 years old. At the day of the survey, 56 participants (59.6%) were sexually active and the first sexual intercourse occurred between 10–14 years in 2.1% of cases, between 15–19 in 31.3% and between 19–24 years in 66.7%. 24 participants (42.9%) reported having only one partner, 16 (28.6%) between 2 and 5 partners, 12 (21.4%) between 6 and 10 partners and 4 (7.1%) more than 10 partners. The use of condoms was systematic in 35.7%, irregular in 50% and never used in 14.3%.

Of the 59 female participants, 21 (35.6%) had previously had a pregnancy. Of the 16 documented, two (12.5%) had carried the pregnancy to term and 14 (87.5%) had aborted: An episode of abortion in 7.1% of respondents, two episodes in 57, 1%, three episodes in 14.3%, more than four episodes in 21.4%.

In 26.8% of the cases, the respondents had shared their serological status with their sexual partner.

Conclusions: More than half of adolescents and young people with HIV have sexual behaviors that increase the risk of infection and infection of their partners.

It would be desirable for anthropological, sociological and psychological studies to better understand certain attitudes and behaviors to be carried out in order to contribute to the promotion of the systematic wearing of condoms, the promotion of sharing of serological status and the accessibility of the family planning service.

2. HIV and hepatitis, from bench to bedside

P26

The analysis of Th1, Th2, Th9, Th17 and Th22 cytokine profiles during long-term suppression of HIV-1 replication

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Introduction: As in many other diseases, cytokines play a central role in the pathogenesis of HIV-1 infection. The effect of prolonged suppression of viral replication on their synthesis is insufficiently studied. The aim of this study was to analyze the effect of long-term suppression of HIV-1 replication in period longer than 2 years on cytokine immunity.

Materials and methods: Eighty treatment-naive HIV-patients were enrolled in cytokine expression analysis. Plasma concentrations of 13 cytokines were measured in two time points, before the initiation of antiretroviral therapy and after a minimum of 2 years of continuous viral suppression by using a multiplex bead-based flow cytometry assay (Human Th1/Th2/Th9/Th17/Th22 13plex Kit FlowCytomix).

Results: Plasma concentrations of selected cytokines before initiation of antiretroviral therapy were: IFN-γ (median 16.7 pg/ml, range 0–966.7 pg/ml), IL-1β (38.0; 0–753.7), IL-2 (34.1; 0–571.6), IL-4 (77.6; 0–409.4), IL-5 (18.2; 0–442.4), IL-6 (1.9; 0–266.6), IL-9 (29.6; 0–508.7), IL-10 (11.2; 0–377), IL-12 p70 (3.7; 0–168.2), IL-13 (67.1; 0–482.2), IL-17A (30.5; 0–296.5), IL-22 (127.6; 0–1815.8) and TNF-α (5.4; 0–479.4). After a minimum of 2 years of viral suppression the obtained plasma concentrations of cytokines were: IFN-γ (median 9.2 pg/ml, range 0–766.5 pg/ml), IL-1β (39.3; 0–974.4), IL-2 (47.9; 0–437.6), IL-4 (45.8; 0–335.1), IL-5 (19.8; 0–537.9), IL-6 (1.1; 0–40.9), IL-9 (20.3; 0–471.9), IL-10 (12.1; 0–938.9), IL-12 p70 (3.4; 0–56.2), IL-13 (42.5; 0–531.8), IL-17A (20.3; 0–238.1), IL-22 (156.5; 0–1453.9) and TNF-α (7.2; 0–879.2). Concentration of IL-17A was significantly decreased in therapy-naive patients compared to HIV-1 negative controls (Fisher's exact test, p=0.03). The differences

in the concentration of cytokines between two time points were not statistically significant.

Conclusions: Our study shows that the long-term suppression of HIV-1 replication has no effect on the plasma concentration of selected cytokines.

P27

Genome characterization of HIV-2 biological clones with divergent replication capacities

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Introduction: HIV-2 variants from asymptomatic, aviremic individuals replicate slower than variants from individuals who progress to AIDS, suggesting an association between in vitro replication capacity and disease progression similar to what is known for HIV-1. We have generated and characterized complete genomes of aviremic and progressor HIV-2 biological clones with divergent replication capacities to identify potential viral factors that may correlate to biological phenotype. We have also assessed the genetic diversity of the HIV-2 LTRs and their association with the replication capacities of these clones.

Materials and methods: HIV-2 biological clones were isolated by co-cultivation of patient PBMC with CD8-depleted healthy donor PBMC in limiting dilution. Genomic DNA was isolated from cells infected with slow, intermediate or fast-replicating clones. HIV-2 genomes were amplifed and sequenced by Sanger method. For the LTR-transactivation assays, 293T cells were co-transfected with variant HIV-2 5'LTR-luciferase plasmid constructs and Tat-expression plasmids.

Results: Whole genome molecular characterization of these HIV-2 variants did not reveal any evidence of recombination. Virus sequences showed no G-A hypermutation and no differences in GC content. The in vitro transcription assays demonstrated that all HIV-2 clone LTRs are functional promoters with a low basal transcriptional activity and are responsive to Tat protein-mediated transactivation. Variation in transactivation did not differ significantly between slow-replicating and intermediate/fast-replicating clones ($p \geq 0.1$), using a standard Tat protein.

Conclusions: Possible causes for the divergent in-vitro replication capacities of these clones remain unclear. Our results demonstrate that there are no major differences in viral factors that may be associated with spontaneous viral supression in aviremic HIV-2-infected individuals. The lack of discernable differences in viral factors indirectly points to a role for host immune responses.

P28

Evaluation of urinary excretion of dolutegravir or emtricitabine/tenofovir/elvitegravir/cobicistat antiretroviral-based regimens using plasma and urine trough concentration

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Introduction: Dolutegravir (DTG) and cobicistat (Cobi) boosting elvitegravir (EVG) were known to increase creatinine levels by blocking renal transporters. The aim was to evaluate the antiretroviral renal toxicity using different plasma and urine markers in HIV-infected patients.

Materials and methods: This prospective single-center open label study received ethic committee approval and included 40 naïve or pretreated patients starting DTG- or EVG/Cobi FTC/TDF(STR)-based antiretroviral regimens. Data were collected at D0, W2, 4,12 and 48. Evolutions of clinical, biological, immuno-virological and pharmacological markers were analyzed between D0 and W48 in each group. Plasma concentrations (C24H) were measured by UPLC-MS/MS. Median (IQR) were compared by Wilcoxon test.

Results: 40 patients were enrolled between 2014 and 2016. D0 patient's characteristics and evolution at W48 are shown in Table. All evaluable patients (15/20 DTG and 16/20 STR arms) were in virological success. HIV-DNA in PBMC does not vary. Overall 9 patients interrupted the treatment before W48, 6 for neuropsychiatric side effects, 1 for virological failure at W12, 1 for pregnancy at W4, and 1 lost to follow-up. DTG, EVG and cobi C24h were 1,440 [1,119–1,920], 315 [185–703] and 25[14–75] ng/mL respectively. Creatininemia and DFGe in CG, MDRD and CKD-EPI showed a significant variation in DTG arm and not for STR. The others renal markers (Cystatine C, calciuria, phosphaturia and proteinuria/, beta2microglobulin/, Retin Binding Protein/creatinuria ratios) did not vary in each of the two groups.

Conclusions: Dolutegravir-based regimens and STR were effective without HIV-DNA in PBMC change. DTG and STR trough concentrations were adapted. No change among renal markers studied. Nevertheless, we found a significant decrease of eGFR with DTG, reflected the interactions with efflux renal transporters. Despite the presence of Cobi and TDF no impact on eGFR was observed in STR arm, probably due to lower creatininemia at D0.

PATIENT'S CHARACTERISTICS median [IQR]	DTG-based regimens at D0 n = 20	DTG-based regimens at W48 n = 15	p value	FTC/TDF/EVG/ Cobi (STR) at D0 n = 20	FTC/TDF/EVG/ Cobi (STR) at W48 n = 16	p value
(ratio F/M) Subsaharan origins (n patients) ARV-Naive (n patients) CDC Stage : C3	(3/17) 2 2 7			(2/18) 4 2 6		
HIV duration (years)	18.3 [3.3–26.7]			10.7 [2.5–18.8]		
ARV duration	17.1 [3.2–20.8]			10.3 [2.3–15.0]		
Nadir CD4 T-cell (/mm^3)	138 [62–318]			240 [146–387]		
CD4 T-cell count/mm^3 CD4/CD8 ratio	■ 521 [450–775] ■ 0.77 [0.58–1.08]	■ 512 [424–761] ■ 0.92 [0.63–1.27]	0.909 0.131	■ 591 [480–780] ■ 0.90 [0.65–1.35]	■ 505 [456–766] ■ 1.17 [0.81–1.45]	0.325 0.016
Plasma HIV-RNA copies/mL	20 [20–30]	20 [20–20]	0.067	20 [20–30]	20 [20–20]	0.144
HIV-DNA $\log_{10}$ copies/10^6 PBMC	2.89 [2.53–3.39]	2.81 [2.63–3.15]	0.507	2.55 [2.31–2.82]	2.85 [2.70–3.04]	0.556
Creatininemia µmol/L	87.5 [79–92]	90 [81.7–103.2] Δ = +2.5	**0.0006**	83.5 [73–95]	86 [83–96] Δ = +2.5	0.468
eGFR (mL/mn/1.73m^2):						
■ CG (Cockcroft-Gault)	■ 95.6 [76.6–105.9]	■ 73.7 [89.9–96.7]	**0.0007**	■ 104.5 [79.2–122.5]	■ 104.8 [78.4–113.1]	0.501
■ MDRD (Modification of Diet in Renal Disease)	■ 81.1 [71.6–93.1]	■ 78.2 [65.1–88.9]	**0.0007**	■ 88.9 [70.5–101.8]	■ 84.2 [69.6–95.8]	0.501
■ CKD-EPI (Chronic Kidney Disease – Epidemiology Collaboration)	■ 91.5 [77.7–100.8]	■ 86.0 [75.0–97.0]	**0.0007**	■ 97.5 [76.2–104.2]	■ 83.0 [75.7–95.2]	0.501
■ CKD-EPI Cystatin C	■ 87.0 [80.5–104.2]	■ 87.0 [69.2–99.0]	0.1675	■ 87.0 [80.0–99.5]	■ 83.0 [75.7–95.2]	0.123
■ CKD-EPI Cystatin C-Creatinin	■ 86.0 [72.7–97.2]	■ 87.0 [64.0–94.5]	0.0958	■ 91.0 [71.7–105.5]	■ 75.0 [68.0–100.0]	0.964

P29

Access to free DAAs for people who inject drugs: is it sufficient to increase the update of HCV treatment by PWIDs?

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Introduction: Georgia has initiated National Hepatitis C Elimination Program since 2015 in response to high HCV prevalence among general population (7.7% antibody and 5.4% RNA positive). Free DAAs are available for all citizens, including PWIDs, but patients have to pay for laboratory and clinical diagnostics out of pocket. PWIDs are the most affected population (50%–92% HCV antibody prevalence, various studies between 1999–2012). The Needle and Syringe Program (NSP) provides HCV testing to about 30,000 PWID within the GFATM program annually since 2006 referring positive individuals to clinics.

Materials and methods: Cross-sectional study was conducted to assess HCV treatment uptake by PWIDs attending 13 NSP sites in 9 cities of Georgia. Totally, 1,110 PWIDs 18+ years, who were enrolled in Program at least 6 months prior to study were questioned. Quantitative data was analyzed in SPSS v.21. Univariate analyzes were carried out. Bi and multivariable analyzes (cross-tabulations, average comparison, t-test, ANOVA) have been conducted to identify the linkages (differences, associations and correlations) between the variables.

Results: The absolute majority (99.8%) of the Study participants knew where to go for HCV testing. 88.3% of them reported being HCV antibody positive.

HCV treatment was received by one third (33%, 367) and 16.8% (78) were waiting for treatment initiation. Other 395 (35.6%) who was HCV antibody positive didn't seek care; In 20.1% cases they complained of high cost and equal 5.6% didn't receive treatment due to long distance to clinic and potential side-effects. The NSP site was identified as the preferred place for receiving treatment by 65.3% of participants, while less than a third (30.7%) would go to specialized clinic for treatment.

Conclusions: The State should consider that the significance of financial barrier for PWIDs in seeking HCV treatment. Integration of HCV treatment with the NSP services is critical to increase uptake of HCV treatment by this most HCV affected group.

3. HIV, hepatitis and comorbidities

P30

Cannabis exposure does not increase risk of liver fibrosis in people living with HIV

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Introduction: Many factors have been identified to impact on liver fibrosis among People Living With HIV (PLWHIV). Cannabis use remains controversial. This study aims to evaluate association between cannabis exposure and liver fibrosis among PLWHIV.

Materials and methods: Transversal retrospective study performed in an outpatient HIV clinical unit. Data of PLWHIV who underwent liver stiffness evaluation (LSE) by elastometry (Fibroscan®) were analyzed. LSE was defined as severe if ≥9.5 kPa in case of HCV coinfection, ≥10.5 kPa in case of HBV coinfection and ≥10.5 kPa in case of liver steatosis. Patients characteristics (age, gender, HIV contamination route, CDC stage, cART exposure, HIV time follow up), HCV status, current and past tobacco, alcohol and cannabis consumption, CD4 cell count, HIV and HCV viral load and LSE values were collected from our electronical medical record. Mixed model logistic regression was used to study severe LSE associated factors.

Results: From 03/2014 to 05/2017, 474 LSE were performed on 274 PLWHIV (70.1% male, median age 51 years, median CD4: 699/mm^3; 92.1% with undetectable HIV viral load on cART). 69.7% were current or past cannabis smokers for 29 years in median. Median LSE was 6 kPa and a severe LSE was observed in 18.8% of assessments (22.3% of patients for at least once of their assessment). In univariate regression, male gender, HIV contamination through intravenous drug used, current or past cannabis use and cured from HCV after treatment were all associated with a higher risk of severe LSE.

In multivariate regression, only male gender (OR=13.17; p=0.004) and cured from HCV after treatment (OR=12.4; p=0.01) were associated with severe LSE. Cannabis exposure was no more associated with severe fibrosis after adjustment on HCV status.

Conclusions: Cannabis exposure was not associated with severe LSE and HCV co-infection was the leading risk factor. These results highlight the need for a regular follow-up after HCV cure.

P31

Acute transverse myelitis in a patient with HIV infection

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Introduction: Acute transverse myelitis (ATM) is an uncommon syndrome characterized by segmental motor, sensory, autonomic dysfunction of the spinal cord.

Materials and methods: Case report of a HIV patient.

Results: A 36-year-old man is HIV positive since 2013, HAART naive, at 2012 had HZV infection, no IV drug user, HCV negative, last CD4 –258 cell/mkl. Patient was feeling completely healthy until at 2016 was hospitalized. The symptoms had begun acutely 4 weeks earlier with numbness of one foot, ice cold sensation, progressive right leg proximal weakness, followed by left leg weakness, bladder dysfunction, disturbed sphincter functions, generalized myalgia, fatigue, severe back and extremity pain that NSIDs didn't ease, appeared as sharp, shooting pain that radiated down the legs, arms and around the torso. Patient could not walk unassisted. Neurological exam showed paraparesis, diminished motor strength in lower extremities, hypesthesia L4-5. Tendor reflexes of the lower extremities were increased, positive Babinska symptom. Hepatosplenomegaly. Blood exams revealed leucopenia –1.83 count/mcl, CRP –276.8 mg/L, CPK –1174 U/L. CD4 –10 cells/mcl. CSF was at normal count, protein 0.62 g/L, glucose 2.74 mcml/L. CSF PCR was positive for CMV DNA –21360 cop/ml, VZV DNA –1437 cop/ml. Blood PCR was positive for CMV DNA –1566 cop/ml. Valganciclovir (VGCV) 900 mg PO and ceftriaxone 2 g IV BID was started. After 17 days started HAART. The MRI of the medulla showed extensive hyperintense signal, characterized by the presence of inflammatory signs extending from Th5 to Th9. Diagnose of ATM was defined. Considering the lack of a significant clinical improvement on VGCV, patient received 6-day course with methylprednisolone 1 g/day IV. In parallel patient received carbamazepine, amitriptyline, rehabilitation, physical therapy. VGCV was suspended after 30 days. Patient clinically improved.

Conclusions: The severity of the course of the disease and possible complications demonstrates the importance of an appropriate and complex management.

P32

Kaposi disease in HIV patients: about 30 cases

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Introduction: Kaposi's disease remains the most common neoplasia in AIDS.

Objectives: Epidemiological, para-clinical and evolutionary analysis of 30 cases of Kaposi's disease.

Materials and methods: A retrospective study of 30 cases of patients living with HIV who presented Kaposi 's disease collected from January 2000 to June 30, 2017.

Results: Patients aged from 23 to 60 with an average age of 40 +/– 3 years including 2/3 men. Heterosexuality is the mode of transmission as noted with 66.6% of cases, followed by 10% of cases of homosexuality. HIV seropositivity revealed Kaposi's disease in 50% of cases. The mean CD4 cell count was 73.2/mm^3 in our series. Mucocutaneous location is notified in 76.6% of cases, and in 13.3% visceral (lung 6.6%, gastroduodenal 6.6%) and the skin in 10%. The biopsy confirmed the diagnosis in 30% of cases (23% skin, gastroduodenal 7%). Opportunistic infections were associated in 43% of cases, dominated by tuberculosis 16.6%, esophageal candidiasis oral 10%, cryptococcal meningitis 6.6%, 6.6% and minor salmonellosis pneumocystis pneumonia in 3.3% of cases. Two cases of HBV co-infection are noted. Four male patients had a systemic form (mucocutaneous and gastrointestinal involvement 2 cases, mucocutaneous and gastroduodenal reached 2 cases). None of our patients received anti-cancer chemotherapy, 90% received antiretroviral treatment, and 10% were not eligible for treatment due to advanced disease and non-compliance. The evolution marked by 11 deaths secondary to severe pneumonia tables 6 cases visceral localization 4 cases, 1 case polymyositis broadcasts. The outcome was favorable in 2/3 of cases, however, there is a case lost.

Conclusions: This work highlights the importance of early diagnosis, the impact of gravity location objectifying interest of chemotherapy associated with antiretroviral therapy.

P33

Fanconi syndrome induced by tenofovir in HIV patients

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Introduction: Tenofovir disoproxil fumarate (TDF) is a nucleotide reverse transcriptase inhibitor. It is currently the treatment of choice for patients co-infected with human immunodeficiency virus (HIV) and hepatitis B virus. Its antiretroviral efficacy and good tolerance are responsible for the higher frequency of prescriptions compared with other nucleoside analogs. However, it can induce acute renal toxicity causing impairment of the proximal tubular function of the kidney. This is highly dependent on factors such as preexisting renal insufficiency, low body weight, or presence of associated diabetes

Materials and methods: We report a case of Fanconi syndrome associated with the use of tenofovir disoproxil fumarate. A 67-year-old HIV-infected woman on follow-up in the Infectious Diseases Hospital of Setif for HIV1 infection since 2004. Her HIV infection was well controlled by antiretroviral therapy; she presented with Fanconi syndrome with acute renal failure three months after starting antiretroviral treatment including tenofovir.

Results: Our case illustrates the first case of Fanconi syndrome that occurred in Infectious Diseases Hospital of Setif in a patient infected with HIV-1 and treated with a triple regimen including tenofovir. The overall incidence of renal toxicity including Fanconi syndrome due to tenofovir remains quite rare.

Conclusions: This report highlights the need for close monitoring of renal function, calcium and phosphate, proteinuria, and glycosuria in patients treated with antiretroviral drugs, including tenofovir by clinicians.

P34

Dual agents against HIV and HCMV

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Introduction: Since the first description of AIDS, coinfections have been part of the clinical presentation and HCMV (human cytomegalovirus) is among the most common opportunistic infections observed in HIV-infected persons. HCMV, a virus that infects people of all ages, is not overly pathogenic in immunocompetent people. However, in HIV-infected individuals, HCMV is associated with a wide range of serious clinical diseases, such as retinitis, pneumonitis, colitis and other end organ disease, as well as with indication of more rapid HIV disease progression and increased occurrence of AIDS-related events. Recently, HCMV has also been associated with a higher risk of HIV transmission. The combined use of antivirals targeting HIV and HCMV may be beneficial both for patients already infected with HIV-1 as well as for prevention of HIV-1 transmission. The development of dual-targeted drugs that combine anti-HIV-1 activity and anti-co-pathogen activity constitutes a new step in therapeutic strategy. Potentially such drugs may be less toxic than combinations of several compounds.

Materials and methods: Compounds were synthesized starting from corresponding 1-[ω-(4-bromophenoxy)alkyl]uracil derivatives and 2′,3′-dideoxy-3′-azidothymidine (AZT). Stability of compounds was studied in the presence of different esterases.

Results: Here we present new conjugates of non-nucleoside HCMV replication inhibitors and AZT, a classical nucleoside inhibitor of DNA biosynthesis, catalyzed by HIV reverse transcriptase.

Conclusions: The proposed conjugates are depot forms and will be hydrolyzed by the action of cellular enzymes, releasing components that have high antiviral activity. The creation of these molecules will improve both the solubility of non-nucleoside inhibitors and the pharmacokinetic parameters of the modified nucleoside.

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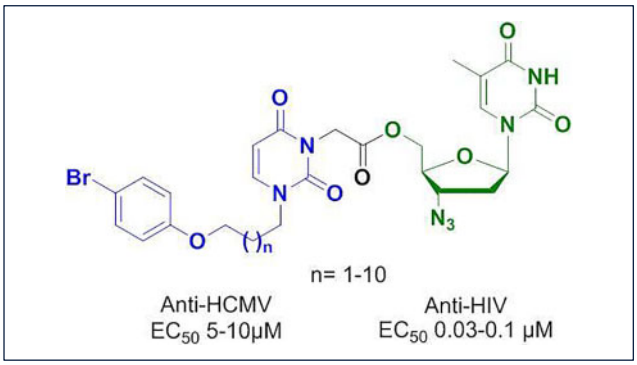

4. Clinical management of persons living with HIV

P35

HIV in males and females: a clinico-epidemiological study in Setif city (Algeria) from 1986 to 2017

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Introduction: Available evidence on HIV epidemic in Algeria shows a stable trend at a national level. The provisionally estimated cumulative number of reported cases of HIV up to the end of 2016 is 10,319.

Materials and methods: Retrospective analysis of epidemilogical, and clinical features of 217 female and 333 males, above age of 18, living with HIV/AIDS, attending care at teaching hospital in East of

Algeria from January 1986 to June 2017. Data were collected and analyzed by epi info 7.

Results: 550 HIV+ patients, 60.5% were males. Mean age was 38.9 and 38.4 years for males and females respectively. 54.6% of males and 67.6% of females were married. 11.7% male patients were migrant workers, 27.7% currently unemployed, 87.5% females were housewives. Heterosexual contact was the commonest mode of transmission (82.6%). Unprotected extramarital sex by husband is the most source of infection. 91.8% of married men have sexual relationships outside marriage, as compared to 0.0% for married women. Among married couples, 72.4% of males had HIV+ wives, whereas 94.4% of females had HIV+; 16.9% of males were not aware of the HIV status of their wives and among females 6.1% did not know the HIV status of the husband. 89.2% of males were diagnosed before their wives. Among female, 62.9% had diagnosis of disease first among their husbands. 15.3% females had already lost their husbands in comparison with males where 1.4% of them had lost their wives. Diagnosis was late in 62.4% and 42.6% for male and females respectively. The most common opportunistic infection was PJP (16.4%); 89.8% females were on ARV in comparison with males (81.9%); HIV mortality rates were higher for men (32.2%) than women (18.1%).

Conclusions: A higher female prevalence of HIV infection might be expected in Algeria due to high-risk behavior among men (unprotected extramarital sex). Most of female had no independent income. Initial diagnosis was earlier in the case of the husband. The hight rates of deaths can be explained by delay in diagnosis.

P36

Adherence to aniretroviral treatment and knowledge on HIV/AIDS among the people living with HIV in Armenia

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Introduction: Antiretroviral therapy (ART) stops the progression of HIV infection and prevents HIV transmission. Successful treatment depends on the level of adherence to ART. We aimed to identify the association between the ART adherence and the knowledge on HIV/AIDS and ART among the people living with HIV in Armenia.

Material and methods: We used convenience-sampling approach to recruit 180 study participants. Sample size was calculated using the formula for two equal groups to find a difference in proportions. We used quantitative cross-sectional survey design. Interviews were conducted using structured self-administered questionnaires in 2017. We used 4-item Morisky scale to measure adherence to ART. Descriptive statistics and simple logistic regressions were run using SPSS.

Results: The adherence to ART was 54%. About 53% of the participants thought that HIV infection is curable, 41% of them knew that ART has many side effects, 86% of the respondents were aware that life expectancy improves when they receive ART and 82% knew that the treatment is not effective if taken irregularly. In unadjusted analysis, no significant associations were found between the ART adherence and the answers to the first two knowledge questions (1. HIV is curable, 2. AR has many side effects). In unadjusted analysis, those who knew that the life expectancy improves when they receive ART had 3 times higher odds of being adherent to ART (OR 3.08, 95% CI 1.26–7.52) compared to those who did not know. Those who knew that the treatment is not effective when taken irregularly had about 2 times higher odds of being adherent to ART compared to those who didn't know (OR 2.40, 95% CI 1.20–5.24).

Conclusions: The results suggest the need for educational programs to increase the knowledge on HIV/AIDS and antiretroviral treatment. Further studies will help to explore determinants of adherence to ART in depth.

P37

The usefulness of an annual medical check-up in people living with HIV: a French multicenter experience

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Introduction: HIV medical care has evolved from conventional hospitalization towards outpatient care. French guidelines promote annual assessment in one-day, in order to optimize medical care. The aim of the study was to assess the usefulness of annual medical checkup in term of comorbidities screening.

Materials and methods: A multicenter cross-sectional study was performed in 2016, involving people living with HIV (PHIV), followed-up in 4 HIV-dedicated hospital medical units in South France. Besides classical HIV and demographic data, health indicators collected were: hepatitis B/C; types of paramedical examination; tobacco use; deprivation by the Epices score.

Results: During 9 months, 441 PHIV completed an anonymous questionnaire; mean age was 53.3 years old, 78.9% were men. HIV-transmission was 21.5% heterosexual, 55.1% men who have sex with men (MSM). 97.5% patients were on antiretroviral treatment, 89.5% had non-detectable viral load. About 1/4 had HCV coinfection; 46.3% were deprived; 64.4% declared tobacco use. Global prevalence of detected abnormalities was 18.8% (83/441) identified by at least one of the following investigations: 33/137 patients (24.1%) with pulmonary function testing; 21/195 (10.8%) with cardiovascular explorations; 17/151 (11.3%) with proctologic examination; 2/20 (10.0%) with cervical smear and 25/405 (6.2%) with sexually transmitted infections (STI) testing. Multivariate logistic regression analyzes showed that the detection of abnormalities in men was linked to tobacco use (OR:2.4), HCV coinfection (OR:2.1) and to less antiretroviral treatment lines (OR:0.9). The detection of abnormalities in women was only linked to tobacco use (OR:8.6).

Conclusions: Our results suggest that in this population of PHIV where deprivation and tobacco use are important, annual testing for pulmonary function and cardiovascular diseases should be realized yearly in order to prevent complications. It also suggests that MSM that are at risk of proctologic lesions and STI should be tested more than once a year.

P38

Identifying smoking cessation targets for people living with HIV and HIV-HCV

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Introduction: Tobacco smoking is among the most significant predictors of cardiovascular disease and lung cancer in people living with HIV (PLWHIV). We conducted an exploratory analysis of tobacco-related clinical and sociodemographic characteristics of smokers at the Chronic Viral Illness Service (CVIS) to inform smoking cessation (SC) interventions.

Materials and methods: A convenience sample of tobacco-smoking PLHIV completed a 10-minute survey on tobacco-related behaviours and outcomes. Non-parametric univariate and bivariate statistics by hepatitis C (HCV) serostatus (to account for unmeasured socioeconomic or psychosocial factors) are provided.

Results: 72 patients participated. Oral therapy (e.g. varenicline) (16.7% [95%CI:8.9–27.3%]) and SC counseling (5.6% [1.5–13.6%]) were used less than nicotine patches (50.0% [38.0–62.0%]) or 'other'

methods, which included abstinence and nicotine gum (50.0% [95%CI:38.0–62.0%]) (p<0.001). Compared to HCV-seronegative participants (n=43), HCV-seropositive participants (n=29) started younger (median:16 [95%CI:11–24] vs. 21 [95%CI:19–26], p=0.019), appeared to smoke more cigarettes per month (median:525 [95%CI:300–600] vs. 270 [95%CI:180–375], p=0.064), appeared more likely to report coughing (51.7% [95%CI:32.5–70.6] vs. 30.2% [95%CI:17.2–46.1], p=0.086) or shortness of breath from mild exertion (78.6% [95%CI:60.3–92.0] vs. 48.8% [95%CI:33.3–64.5%], p=0.014), showed less interest in quitting in six months (51.7% [95%CI:32.5–70.6%] vs. 78.6% [95%CI:61.4–88.2%], p=0.022), and were more likely to have ever injected drugs (86.2% [95%CI:68.3–96.1%] vs. 7.0% [95%CI:1.5–19.1%], p<0.001).

Conclusuions: Counseling and oral therapy were underused evidence-based SC strategies, regardless of HCV serostatus. HCV-seropositive patients were more likely to have injected drugs, less interested in SC, appeared to smoke more, and had more smoking-related symptomatology. SC approaches for this population could be paired with interventions to address socioeconomic or psychosocial SC barriers in PLHIV.

P39

Impact on patient health outcomes after the implementation of free and anonymous HIV care and treatment at a community-run clinic in Bamako, Mali

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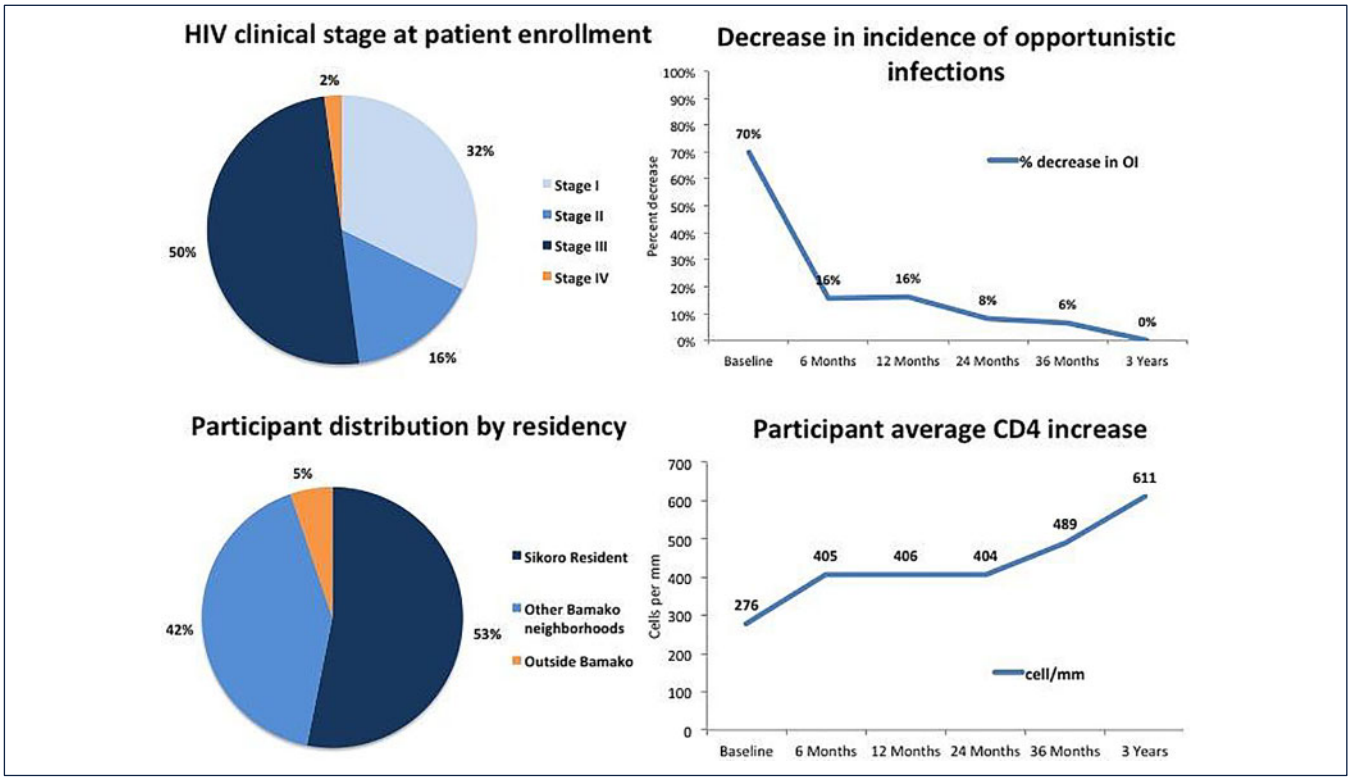
Introduction: In Mali, there are an estimated 110,000 people living with HIV, yet only 35% are currently accessing antiretroviral therapy (ART). In 2009, ART was only available at a few locations in Bamako. GAIA Vaccine Foundation worked with local authorities to implement the first treatment site at a community-run clinic (ASACOMSI).

Materials and methods: Data was collected for 96 people living with HIV (PLWHIV) enrolled in care at the ASACOMSI from 2009–2011. Clinical suspicion and routine prenatal HIV testing were the main reason for inclusion in the care program. Anyone who tested positive was scheduled for a CD4 count, if CD4 count was below 300 cells, they were offered ART, according to Malian protocols at the time.

Results: 76% of the 96 participants were female. 51% were residents of Sikoro, the neighborhood served by the ASACOMSI, 42% lived in other districts of Bamako, and 5% came from outside the capital. 70% of participants presented with an opportunistic infection (OI), most commonly a digestive infection (20%) or bacterial pneumonia (19%). The majority of participants were at the AIDS stage: 50% Stage III and 2% Stage IV. Over half had a CD4 count below 300, the criteria for starting ART.

The effectiveness of ART was reflected by a decrease in OIs and increase in CD4 cells. After 3 years of ART, there were 0 cases of OIs and participants' CD4 rates increased by over 200%. 2 individuals passed away after enrollment in the program (2% mortality rate). In 2008, there was an estimated 6% national mortality rate among treated and untreated PLWHIV.

Conclusions: Access to local and anonymous care and treatment showed a significant impact on patients' health outcomes and reduced mortality. Integrating access to ART with the primary care system of community-run clinics in Mali can play an important role in the early management of HIV/AIDS.



P40

Site identification and development for microbicide trials in resource-poor setting: the experience of Nestra Klinical/Access to health

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Introduction: The need for novel method to prevent human immunodeficiency (HIV) infection has become an urgent global publich health priority. In sub-saharan Africa (SSA), 57% of all people infected with HIV are women and girls. The need for new female-initiated microbicides that prevent HIV infection could provide an important tool to control the HIV/AIDS epidemic. Regions heavily affected include those of low income with already stretched scarce resources for clinical management. These areas are often lacking in research experience and microbicides expertise.

Materials and methods: Criteria used by Access/Nestra Klinikal to identify sites are: HIV prevalence and incidence; population and community characteristics: investigator interest: ability to develop physical research infrastructure; ability to conduct research according to internationally approved guidelines; regulatory and ethical environments; and the availability or the ability to build clinical support structures for trial participants.

Results: Selection and development of sites for clinical trials should be undertaken in a comprehensive fashion to create an effective research environment that includes regulatory, scientific and political/community concerns. Site selection and development for large muilti-center efficacy varies.

Conclusions: Site selection by sponsors is best archieved in collaboration with local researchers familiar with the communities who can provide comprehensive strategic plans for individual site development. Early involvment of host country representatives may enhance product registration following pivotal efficacy trials.

5. Prevention

P41

Maternal and infant age, feeding options, ART use and singlet/multiple pregnancy affect rates of mother-to-child transmission of HIV in Cameroon, 2004–2013

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Introduction: Transmission rate of HIV from mother to child transmission (MTCT) is reducing in many countries. While it is the case in Cameroon, risk factors should be identified to further reduce this transmission. We aimed to evaluate the risk factors associated with MTCT HIV in Cameroon from 2004 to 2013.

Materials and methods: We conducted a retrospective study based on early infant diagnosis results as well as the clinical data collected from their mothers. Data collected from 2004 to 2013 were analyzed using Stata software and the Pearson's chi-square and Fisher's exact tests.

Results: A total of 15,233 HIV infected mothers and their 15,404 exposed infants aged 6 weeks to 18 months were recruited. Mean age of infants was 16.7 weeks, and 34.8% were breastfed. Mean age of mothers was 27.5 years. The overall rate of transmission was 9.4%. No gender was associated to MTCT. Only 3.8% of infants were HIV infected when their mothers underwent ART treatment compared to 25.9% when they did not. As well, only 4.1% of infant were infected under Nevirapine prophylaxis, compared to 26.4% when no Nevirapine was given to the infant. Infection rate increased with infant 'age at testing. The younger age of the mother also favors the transmission ($p=0.003$). There were more infected children in singlet pregnancies compared to multiple pregnancies, $p<0.001$. The order of delivery in twin's pregnancies did not impact MTCT. There were more HIV infected children in male-female twins' sets ($p=0.037$)

Conclusions: In our setting, taking altogether much effort is needed to reduce vertical transmission of HIV. Our results prove the efficiency of ART in mothers as well as ARV prophylaxis in infants in the reduction of MTCT. The mother and infant age and the feeding option also impact the transmission of HIV. These findings suggest that many parameters contribute to MTCT of HIV-1. Interventions to decrease MTCT of HIV through family planning and regular pre/post natal consultations and good clinical practices should be re-enforced.

P42

PrEP in the CeGIDD of the Departemental Council 13: local data (June 2016–January 2018)

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Introduction: This retrospective study assesses the impact of Pre-Exposure Prophylaxis/HIV in patients included in the free centers of extra-hospital screening and Diagnosis information on CD13, examining HIV seroconversions, treatment tolerance and the prevalence of sexually transmitted diseases (Syphilis, Chlamydiae, Lymphogranuloma Venereal, hepatitis).

Materials and methods: The ANSM order of June 07, 2016, authorizes extra-hospital CeGIDD to prescribe the association Emtricitabine/Fumarate of Tenofovir Disoproxil in HIV PrEP. This analysis covered a period of 20 months, from June 2016 to January 2018. 228 individuals were included, for which a compendium of behavioral and epidemiological data was carried out. A clinical and biological follow-up at 1 month and every 3 months including an STD and renal assessment was prescribed.

Results: 228 males and MSM were included in the study. 30% were under the age of 29, 61% were between 30 and 49 years old and 9% over 50 years old. 75% declared that they did not use any psycho-active substances. The side effects of PrEP were limited to 7% digestive disorders and 1% cephalgias. No HIV or hepatitis B seroconversions were observed. 2 patients had acute hepatitis C, including 1 with a co-infection hepatitis A that required the cessation of PrEP. 4 acute hepatitis A were diagnosed. Among the 228 MSM, 17 showed Syphilis, 40 had Gonorrhea, 33 Chlamydiae and 10 with a Lymphogranuloma Venereal. There were a total of 123 episodes of treated STDs (17 Syphilis, 56 Gonorrhea, 40 Chlamydiae, 10 LGV). It was also noted that PrEP increased immunization coverage for hepatitis A (0/33%) and hepatitis B (64/83%).

Conclusions: PrEP-HIV is a well-tolerated prophylaxis. No HIV seroconversion was detected over this period. The prevalence of STDs in PrEP is difficult to compare to the pravalence of STDs in non-PrEP, due to different behavioral and sexual practices. The challenge of extra-hospital CeGIDD will be to reduce the number of STDs to come, to insist again and again on prevention and screening with close follow-up.

P43

Knowledge regarding human immune deficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) in a French hospital

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Introduction: On World AIDS day 2017, a survey regarding HIV and AIDS was conducted in our hospital. The principal aim of the study was to assess HIV knowledge in order to drive awareness of HIV transmission, prevention and treatment.

Materials and methods: The survey was conducted by healthcare professionals. The questionnaire consisted of eleven items. Data included respondents' demography (sex, age, occupation i.e. healthcare professional), knowledge of HIV epidemiology, transmission, prevention and treatment. They were collected in the multiple-choice questionnaire and analyzed with Microsoft Excel.

Results: We analyzed 107 responses. Among these, 66 came from healthcare professionals.

For 13% of healthcare professional respondents and 32% of the other respondents, there is no difference distinction between HIV and AIDS. The data also suggests that people are generally aware of HIV transmission and prevention. It is well known that HIV is spread mainly by having sex with (97%) or sharing drug injection equipment with someone who has HIV (77%) and that the correct use of condom reduce the risk of HIV infection (98%).

But a significant gap in knowledge persists, notably about AIDS testing and the course to follow a risk behaviour. The testing sites were well known (laboratory, hospital, health center), except the in-home HIV test known for less than half of the respondents. 60% of healthcare professionals and 55% of the other respondents were knowledgeable about post-exposure treatment. 3% of healthcare professionals didn't know the procedure to follow after a risk behaviour.

The importance and the efficiency of treatment were well known even if 5% of the general population still wrongly believes that antiretroviral therapy can cure HIV infection. Only 78% of healthcare professionals and 57% of the other respondents know that HIV treatment is a lifetime treatment.

Conclusions: This survey was an opportunity to improve the knowledge of HIV among the general population even with healthcare professionals.

P44

Acceptance of HIV self-testing in DR Congo: results from a questionnaire survey

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Introduction: Many countries affected by the burden of HIV have decided to implement HIV self-testing, a strategy designed to reach the UNAIDS target of 90% of people worldwide HIV-tested by 2020. Despite some challenges, HIV self-testing is easily accessible and cost-effective, particularly regarding the human, material and financial considerations. Those who test positive are advised to go to the health facility for appropriate healthcare.

Materials and methods: We conducted a voluntary survey in French with 40 young people living in Beni city, North Kivu, DR Congo. Data was entered into an Excel database.

Results: All 40 persons completed the questionnaire in full. Average age of respondents was 31 years old (range 18–46 years). Males represented 50% of the sample. Marital status was 55% single and 45% married. The majority (97.5%) was employed, 60% were health workers, and 35% were students (secondary school or university).

Over three-quarters (77.5%) of the respondents agreed to enroll for the self-test, and 72.5% were able to pay the test fees if required. 27.5% noted that the self-test is less expensive than the test at the dedicated test facilities.

The self-test was perceived as very advantageous for the following reasons: Discretion (58%), rapid result (90%). Reported disadvantages included technical difficulties of self-test (22.5%), fears about a false result (22.5%), emotional distress if the test is HIV positive (27.5%), and fear of suicide (7.5%). 10% also fear the risk of intentional propagation of HIV by persons who test positive.

Following a negative result, most respondents (60%) said that they would keep using preventive measures against HIV and other sexual communicable diseases. Others (17.5%) said they would follow the instructions to repeat the test in 3–6 months.

Conclusions: Most respondents regarded the HIV self-test favorably. Reported advantages are discretion and the rapid result. Main concerns are possible technical difficulties and emotional distress.

P45

Counselling volunteer testing nocturnal anonymous in MSM HIV and syphilis in the population at risk MSM: case of 2AVIE in Togo

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Introduction: The ALLIANCE ACTION VIE Association carries out voluntary HIV and syphilis screening activities. Peer educators (EPs) distribute free screening vouchers and MSM come to take their test within the association. We organized nocturnal campaigns on our premises, giving results on the spot, then, to reach more people, campaigns on sites (maquis, bars, dance halls and train stations). The goal for us is to touch more MSM, many want to do the tests but will not move and go to them is more motivating.

Materials and methods: We work with the mobile HIV prevention and testing unit 2AVIE. PEs select the sites most frequented by MSM and also at the request of MSM. The 2AVIE Screening Committee team has trained two MSM facilitators who administer the pre- and post-test questionnaires. The screening is done with the tests Determines HIV and Syphilis and SD Bio line, the test is open to everyone, even without good, the PE distribute good and stick discrete distinctives on them. These identifiers allow a good reference at the time of the test run for MSM. We had eleven releases in three months.

Results: We reached 613 MSM. All were screened and received their results. Of these tests, 08 were positive for HIV and 02 for Syphilis and on the spot they had their first dose of syphilitic treatment and an appointment was made for the second and third dose. HIV positive cases are in the active file of the association.

Conclusions: This method has had an impact: The number of MSM screened has increased considerably because in six months in fixed strategy we reached 165 MSM while with this method we touched in three months 613, in addition to other networks make us call to organize screening campaigns in their site. MSM have selected other sites and ask us to organize screening actions in them. This being a pilot phase, we intend to organize other actions in other sites.

P46

Barriers to HIV testing in health care facilities, knowledge, attitude and practice of healthcare providers in the country of Georgia

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Introduction: Georgia is a small country with HIV prevalence less than 0.5%. There is universal access to HIV treatment and care; however 50% of all HIV infected persons are not diagnosed until late in their infection.

In order to evaluate the knowledge, attitude and practice of health care providers and barriers to HIV testing, we surveyed health care providers to develop recommendations for improving the current strategies for HIV testing in health care facilities in Georgia.

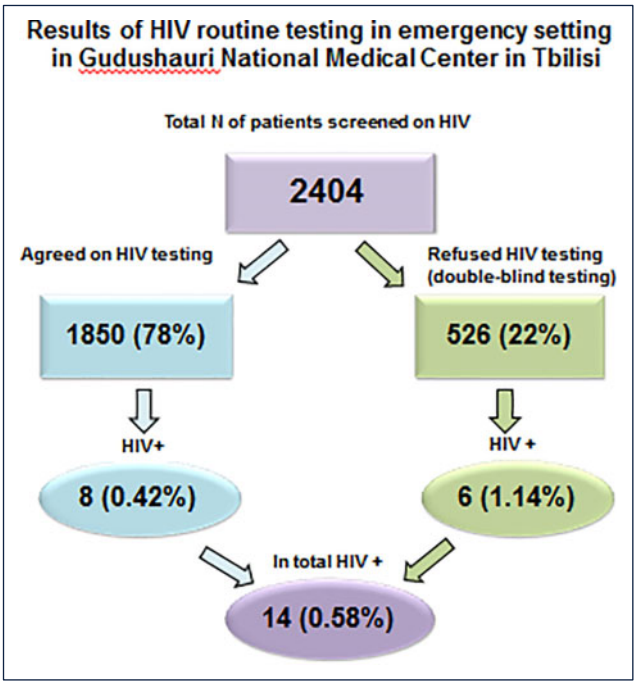
Materials and methods: Anonymous interviews were conducted by 330 randomly sampled physicians from June 1 to November 30, 2016. Data were analyzed by R software.

Results: Mean age of physician respondents was 43; 71% (234) were women with the mean work experience of 19 years. 44% (144) reported having received training on HIV and 87.5% (289) were aware of the national free HIV testing program. 79% (261) of providers reported that in their clinical settings HIV testing is performed. Clinical symptoms of HIV/AIDS were correctly identified by 35% (114) and 16% (52) did not know the means of HIV transmission. Disclosure of patients HIV status to ensure physicians safety was considered mandatory by 84% (277). Respondents 32% (106) considered stigma, 48% (157) lack of information and 58% (190) financial resources, governmental and administrative support as barriers for HIV testing.

Conclusions: The main barriers include: low level of knowledge on HIV testing, treatment and prophylactic strategies; poor motivation; HIV related stigma among health care workers; lack of HIV training and insufficient financial support.

We suggest the need to improve HIV testing performance in health care facilities, in order to increase the early diagnosis and effective treatment of HIV patients, education of health care providers concerning the importance of screening for early diagnosis and treatment to preserve the health of HIV patients and prevent transmission is critically needed.

Acknowledgement: Study is supported by the International Science and Technology Center



P47

Feasibility and effectiveness of routine HIV screening in emergency setting in Georgia

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Introduction: Late HIV diagnosis is a significant problem in Georgia with 55% of newly diagnosed HIV persons presenting with CD4 count <350 cells/mm³. The study evaluated feasibility and effectiveness of routine HIV testing of all persons admitting to emergency service in tertiary referral hospital in the capital city of Tbilisi. An internationally recognized standard for effectiveness 0.1% was considered as a threshold.

Materials and methods: Prospective study was conducted in Georgia's one of the largest multi-profile hospital Gudushauri National medical Center (GNMC). Opt-out testing was conducted by trained health care providers using HIV Ag/Ab rapid test as part of the standard of care among all adult patients 18–65 years admitting to GNMC. Patients with known HIV positive status were excluded. Patients who declined HIV test were involved in anonymous double-blind HIV Ag/Ab testing without any link and identification information. Specimens, reactive on rapid test were confirmed by Western Blot or nucleic acid test. Data were analyzed by R software.

Results: Of the 2,404 patients screened on HIV, 14 (0.58%) confirmed HIV positive. 8 (0.42%) were HIV diagnosed among patients, who agreed on HIV test and 6 (1.14%) – among 526 (22%) patients who refused HIV testing. All identified patients were successfully linked to care.

Conclusions: The pilot routine testing showed to be effective and feasible in example of one multi-profile hospital GNMC. Significant was the prevalence of HIV in a double-blind group, which can be explained by previously known HIV positive status. We suggest the need to implement routine HIV testing in emergency settings across the country. More efforts should be taken to convey patients on HIV testing in order that HIV positive persons are not missed, increase early diagnosis and improve treatment outcomes of HIV patients.

Acknowledgement: The study was funded by the International Science and Technology Center (ISTC)

6. Emerging infectious diseases and STDs

P48

Imported malaria in Moscow, 2013–2016

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Introduction: Each year, many international travelers fall ill with malaria while visiting or returning from countries where malaria is endemic. Up to 100 cases of imported malaria are annually registered in Russia. The objective of this study was to describe the epidemiology and clinical characteristics of imported malaria in travelers.

Materials and methods: All parasitological confirmed malaria cases diagnosed from 2013 to 2016 were retrospectively identified at the Infectious Diseases Clinical Hospital No. 2 Moscow. Demographic, epidemiological and clinical data were analyzed.

Results: A total of 81 cases of imported malaria were reported from 2013 to 2016. The median age was 37.8 (17–68) years, and 65 (80.2%) patients were male. Most of the patients were Russian citizens (80.2%). Purposes of travel were tourism, work and education. Sub-Saharan Africa was the region with the most cases (67.9%). Patients were exposed in 22 African countries mainly from West Africa – 38%, Eastern Africa – 31%, and Central Africa – 23.6%. There were 23.5% cases from Asia, of which India had the majority (84%). Fever was the main symptom at admission. 29.6% were severe malaria. Only one death was recorded during this period. Plasmodium falciparum was the most prevalent species with 64.2% cases, followed by Plasmodium vivax 28.4%. (Table 1).

Conclusions: Malaria remains a burden that clinicians face in non-endemic areas. The data of malaria in Moscow well illustrated the endemic regions for malaria. Sub-Saharan Africa was the most common region for contracting malaria, mainly due to P. falciparum. For the safety of people travelling abroad, there is necessity that countries be prepared to prevent, identify and address imported disease in the context of travel health and border health security.

Table 1. Distribution of plasmodial species according to their geographical origin

	P.falciparum	P.vivax	P.ovale	Mixed infection (P.falciparum+P.vivax)	Total
Africa	48	1	4	2	55
Asia	2	18	–	–	20
Latin America	2	4	–	–	6
Total	52	23	4	2	81

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The 'Story-telling Cloth': community-based education intervention for human papillomavirus vaccination in Bamako, Mali. A model for future HIV vaccination campaigns?

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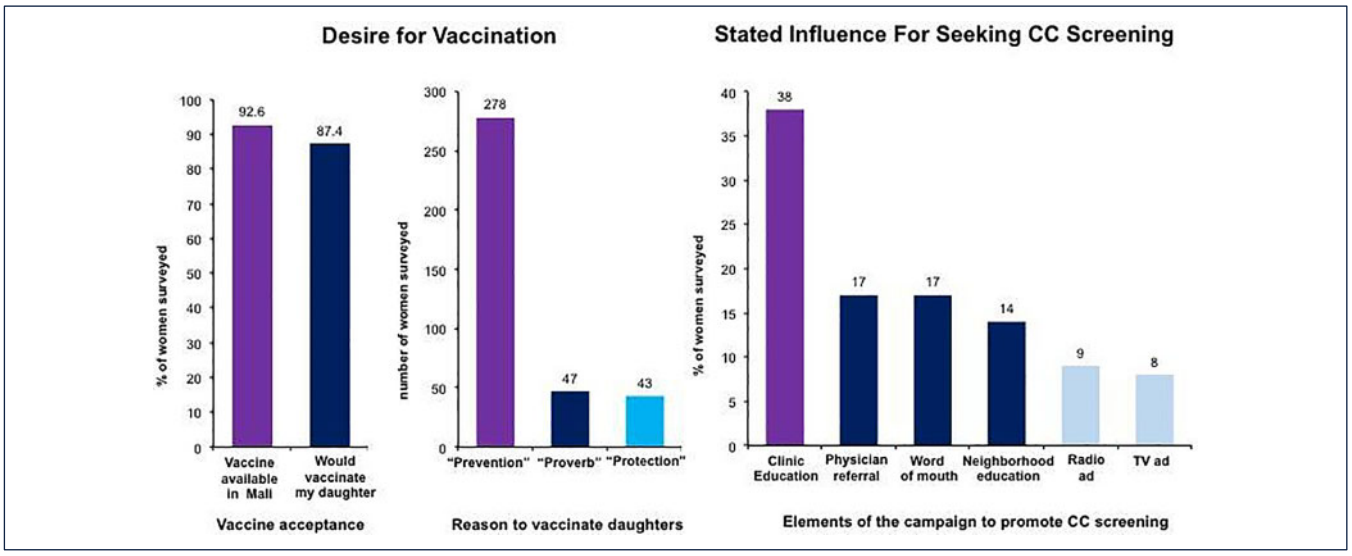
Introduction: HPV-associated cervical cancer (CC) is one of the major causes of morbidity for HIV+ women, worldwide. Each year in Mali, CC claims the lives of over 1,000 women. Existing HPV vaccines are safe and increasingly accessible. The success of GAIA Vaccine Foundation's community-based intervention in Bamako, Mali, using an educational fabric design to increase HPV and CC knowledge, desire for CC screening and HPV vaccine uptake suggests that a similar approach could be employed for future HIV vaccine campaigns.

Materials and methods: In April 2015, GAIA launched a 6-month campaign with outreach workers dressed in a West African style printed cloth with a pattern designed to illustrate the connection between HPV and CC. Healthcare personnel led weekly education sessions in 4 neighborhoods and 5 community clinics (CSCOMs). Women seeking CC screening were surveyed to determine effectiveness of the 'story-telling cloth' and radio ads on knowledge about HPV and CC and willingness to vaccinate their daughters.

Results: 13% of the 500 survey participants knew about HPV, but 75% knew about CC. 87% wanted their daughter vaccinated, and when asked why, 84% quoted 'Prevention', 'Protection', or cited the Malian proverb that was used in the cloth design; 'It is better to prevent than to cure'. 38% indicated that their knowledge was derived from CSCOM education sessions, while only 8% of participants reported radio as a source. During the 6-month campaign, screening rates increased 5-fold at the participating CSCOMs; 3,271 women were screened.

Conclusions: Using the 'story-telling cloth' as a visual aid during education sessions, proved more effective than traditional means of outreach like radio and TV ads. In particular, connecting a locally recognized proverb was an effective way to engage people to protect their health. This community-based approach could similarly be applied to HIV prevention, by linking education efforts to testing and treatment services.



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Syphilis is on the rise among pregnant women in Cameroon

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Introduction: Sexually Transmitted Infections (STI) are infections that are transmitted from person to person by the sexual route. They can also be transmitted by contact with other bodily fluids as is the case during childbirth or breastfeeding. Previous surveys report a prevalence of 6.8% and 0.6% respectively for HIV and syphillis in women aged 24–40. Indeed, the consequences of these infections on pregnant and lactating women are drastic and could indirectly affect their offspring. We looked at the prevalence of HIV/AIDS, syphilis and chlamydia and their risk factors in the vulnerable population of pregnant and lactating women.

Materials and methods: For this prospective cross-sectional descriptive study, venous blood was collected from each woman after signing informed consent form. The samples were tested for the antibodies (antiHIV½, anti-Treponema pallidum and anti-Chlamydia trachomatis) using different techniques (immunochromatography, agglutination and immunoassay). Statistical analysis was done using Epi info 7.2 and SPSS 21.0 software, and categorization with the Chi squared test to determine associations. A p value of 0.05 was considered statistically significant.

Results: A total of 300 pregnant women and 300 breastfeeding women were recruited, with seroprevalences of 2.67% for HIV/AIDS, 2.33% for Syphilis and 6.33% for Chlamydia in pregnant women. In breastfeeding women, a seroprevalence of 1% was obtained for HIV/AIDS. The age of pregnant women was associated with the risk of HIV infection ($p=0.008$) and Syphilis ($p<0.001$). Body piercings was also found to be a factor associated with HIV ($p=0.02$). None of the studied risk factors were associated with chlamydia.

Conclusions: High seroprevalence of syphilis has been observed in pregnant women, and low HIV seroprevalence in pregant and lactating women. Sensitization for syphillis must be emphasized in pregnant women.