



# ABSTRACTS

**International Workshop on Healthy Living With HIV  
2 – 3 September 2016, Barcelona, Spain**

Abstract: O\_01

*Multidisciplinary care of the patient with co-morbidities*

## A Major Concern Among HIV/AIDS Patients: Polypharmacy

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**Introduction:** An increased spectrum of comorbidities is frequently detected in people living with HIV/AIDS (PLWHA). The objective of this study is to determine the comorbidities of PLWHA and drugs to treat those comorbidities in Turkey.

**Material & Methods:** A prospective study was started on the 1st September 2015 in the Hacettepe University Hospital Infectious Diseases Department (tertiary reference centre for PLWHA) and data collection was completed by the 15th January 2016. Volunteers had undergone an interview by a clinical pharmacist after providing an informed consent. Demographic data, disease status, antiretroviral regimens, comorbidities and drugs for the treatment of comorbidities were recorded. The influence of CD4+ T cell counts, age, gender, the number of comorbidities, the total number of drugs that were used for comorbidities and a presence of polypharmacy (greater and equal of 5 drugs) were determined. Descriptive statistics, generalized linear model tests, Kruskal-Wallis test and T-test were performed.

**Results:** A study population consisted of 110 PLWHA among them 41 (38.2%) had at least one comorbidity. Hypertension, diabetes mellitus, dyslipidemia, malignancy, coronary artery disease, psychiatric illness and other diseases were present in 15 (13.6%), 11 (10%), 10 (9.1%), 5 (4.5%), 5 (4.5%), 5 (4.5%) and 17 (15.5%) patients, respectively. Patients with comorbidities were older (mean±standard deviation) than patients without comorbidities (47.05±13.14 vs 38.28±11.70, p< 0.001). Patients were receiving median (range) number of 4 (3-10) drugs daily. Forty (36.4%) patients had polypharmacy. Forty-three (39.1%) had concomitant drug use for comorbidities. On logistic regression model patients on polypharmacy were found to be older (p=0,004) and had a higher numbers of comorbidities (p< 0,001).

**Conclusions:** The risk of comorbidities and polypharmacy is high especially in advanced age of PLWHA. More concomitant drug use may lead to potential drug-drug interactions, adverse effects, higher therapy costs and non-adherence. Clinicians should consider patients' medication carefully while prescribing any treatment for comorbidities in PLWHA.

*No conflict of interest*

Abstract: O-02

*Cardiovascular complications of long term HIV infection and therapy*

## Cardiovascular risk assessment in the Romanian HIV population

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**Background:** Antiretroviral therapy has decreased HIV-related mortality, and has transformed the paradigm of HIV infection. In this new era, morbidity in HIV-positive patients is driven mainly by non-infectious comorbidities, and particularly by cardiovascular complications.

**Material & Methods:** We have performed a cross-sectional study on 119 HIV-infected patients in the time span 2014 –2015, of which 61% (73) were males. After the patients signed the informed consent, we collected information patients regarding HIV infection and treatment, comorbidities, cardiovascular risk factors and diet. We performed blood testing for lipid profile, fasting glycaemia, insulin and renal function. The statistical analysis was performed with SPSS Statistics for Windows (version 22.0, IBM Corp, Armonk, NY, USA).

**Results:** Our patients had a median (interquartile range) age of 35 (26, 44) years, and almost all of them were on antiretroviral therapy (115/119).

We observed that the study population could be divided into groups according to the moment when infection occurred: 1) children infected with HIV in the time span 1988-1990; 2) adults infected with HIV in the time span 1988-1990; 3) patients with more than 15 years of infection; 4) patients with 10-15 years of infection; 5) patients with 5-10 years of infection; 6) patients with less than 5 years of infection.

The median value for the Framingham score was 1.20% (0.20%, 4.30%), the 5-year risk of cardiovascular disease (DAD-CHD5) was 1.00% (0.45%, 2.20%), the 10-year risk of cardiovascular disease (DAD-

CHD10) was 1.90% (0.35%, 6.35%) and the 10-year risk of myocardial infarction was 0.60% (0.10%, 2.80%). Unsurprisingly, both Framingham and DAD scores were statistically significant higher in the male population vs. the female population (Mann-Whitney Test  $p = 0.002$ ,  $p = 0.022$ ,  $p = 0.001$ ,  $p = 0.001$ ).

Comparing patients infected during the same time span (1988-1990) but at different ages, the group infected in childhood (with a current median age of 25 (25, 26) years) had significantly lower cardiovascular risk scores compared with those infected in adulthood (current median age of 47 (44, 57) years) (Mann-Whitney Test  $p < 0.001$ ), suggesting that age remains the main important predictor of cardiovascular risk, even in the setting of HIV infection. However, the duration of HIV infection did represent an important risk factor in itself, the cardiovascular risk scores being significantly higher in patients infected in adulthood in the time span 1988-1990 compared with the those having less than 5 years of infection (current median age 33 (26, 37) years) (Mann-Whitney Test  $p = 0.035$ ,  $p = 0.002$ ,  $p = 0.002$ ,  $p = 0.004$ ).

**Conclusion:** The cardiovascular risk for our HIV population was reported as low based on the Framingham score and moderate based on the DAD scale, being influenced primarily by age and secondarily by duration of HIV infection. This special patient population needs new tools and algorithms to ensure a correct evaluation of cardiovascular risk.

*No conflict of interest*

Abstract: O\_03

*Kidney and bone complications of HIV infection and therapy*

## Impact of lean mass and bone density on glomerular filtration rate estimation in people living with HIV/AIDS

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**Introduction:** Chronic kidney disease (CKD) is a frequent complication in people living with HIV/AIDS (PLWHA). The optimal way to estimate glomerular filtration rate (GFR) in PLWHA patients is not known although MDRD and CKD EPI formulae are most frequently used and rely on serum creatinine values. The impact of muscular mass on creatinine level in PLWHA and therefore GFR estimation, is unknown.

**Material and Methods:** 44 HIV-1 patients were included in a transversal monocentric comparative study evaluating the accuracy of the different diagnostic tests available compared to the gold standard measurement of GFR. Adult, male, Caucasian patients with an estimated (Cockcroft) GFR between 60 and 30 ml/min/1.73 m<sup>2</sup> were included. Serum enzymatic creatinine, urea, albumin, proteinuria, and cystatin C were measured. GFR was estimated using Cockcroft, MDRD, sMDRD, CKD Epi, CKD Epicyst, CKD Epicyst/creat formulae, and measured using isotopic Chrome51 EDTA clearance. Bone density and lean mass were measured by DEXA scan.

**Results:** Mean age was 62±10 years with 82%>50. Mean delay from HIV diagnosis was 19±7 years.

Mean BMI was 23±4 with 25%>25 kg/m<sup>2</sup>. Prevalence of diabetes was 26%, HTA 47%. Viral load was <40 copies/ml for 91% of the patients and mean CD4 count was 438±195 cells/mm<sup>3</sup>. Mean measured GFR was 63.4±13.5 ml/min/1.73m<sup>2</sup>. All formulae under-estimated GFR. The best relative precision and accuracy were provided by the CKD Epi formula. 16 out of 44 patients exhibited abnormal muscular mass. Using total body T score, 25 patients (57%) exhibited values below -1. Lean mass values decreased with ageing as expected. Patients with a relative lean mass value below 70% had higher BMI (p = 0.0005) and measured weights (p = 0.0024). They also had the lower values for T-score (often below -1) (p = 0.0017). Body mass did not significantly influence accuracy or precision of GFR estimation formulae.

**Conclusion:** In PLWHA in stable immune virologic condition with CKD stage 3 and high prevalence of metabolic associated conditions, body composition (although not necessarily normal) does not influence GFR estimation.

*No conflict of interest*

Abstract: O\_04

*Innovative approaches to promote long term health in HIV infected*

## Development of an innovative mHealth application to support self-management strategies for people living with HIV

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**Introduction:** HIV is now considered a chronic and episodic condition, whereby many individuals are living longer and ageing with the health-related consequences of HIV, adverse effects of treatment and multi-morbidity. These related consequences can result in physical, cognitive, mental and social health challenges, and self-management strategies to address these challenges can optimise health and well-being for people living with HIV (PLWH). Using technology such as mHealth (using mobile devices for health) provides opportunities to engage key populations, as over 75% of the world has access to a mobile phone. mHealth technology has been developed for HIV prevention, testing, retention in care, initiation and adherence of anti-retroviral therapy. However mHealth applications (apps) have not been developed to support self-management strategies for PLWH. We describe the development of mHealth app 'BeYou+' designed to support self-management among PLWH.

**Material and Methods:** BeYou+ was developed over 26 months from March 2014, as a collaborative innovation network between Chelsea and Westminster

Hospital NHS Foundation Trust and hospital charity CW+, with their technology partner Imagineear. The innovation network consisted of over 60 people including multi-professional clinicians specialising in HIV, PLWH, app developers, charitable organisations and artists. Written content was provided by experts in respective topics, and editing was conducted in 2 phases; 1) content reviewed by teams of senior clinicians 2) professional, independent editing by 2 editors, one with expertise in HIV. Three focus groups were conducted with PLWH, to develop the goals and rewards system in collaboration with artists, and review the content and structure of BeYou+.

**Results:** BeYou+ was released cross-platform on Apple and Android in May and June 2016 respectively, and is available to download for a one-time fee. BeYou+ provides written content specific to the body, mind and life when living with HIV, with external hyperlinks to reliable online resources, and internal navigation around BeYou+ to support knowledge acquisition. Content written in English, is divided into 3 sections of body, mind and life, with 44 subsections including sexual health, having a baby, ageing, low mood and depression, body image, exercise, diet, alcohol, drugs, gender identity, living with a disability and more. All content encourages self-management strategies, which is further supported with a goal and reward section; including a weekly goal progress scale, daily reminder notifications and reward videos on achieving 70% of expected weekly goals. Additional sections include new diagnosis, peer support, I need help, keep up to date and appointments, which synchronises with the phones calendar. An introductory video navigates users on first downloading. Providing feedback has been built into BeYou+ and is encouraged for future development and modification. At the time of writing BeYou+ was downloaded 81 times across 10 countries. Marketing of BeYou+ is provided via website and social media platforms. A working party has been established to research the experience and effectiveness of using BeYou+.

**Conclusion:** BeYou+ is an innovative mHealth app developed to support PLWH to self-manage and improve health and well-being. It is available to download on apple and android devices.

*No conflict of interest*

Abstract: O\_05

*Innovative approaches to promote long term health in HIV infected*

## **Development of a comprehensive women's health service for women living with HIV - A service evaluation**

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**Introduction:** The Lawson unit is a large HIV unit providing care for 2325 patients. Less than 12% of the cohort is female. We aim to strengthen services for women living with HIV by launching an innovative, dedicated service offering one-stop-shop access to a range of services important to women. Here we present the results of a patient questionnaire to identify barriers women experience when accessing existing services and their future healthcare needs.

**Materials and methods:** An anonymous patient questionnaire was completed by women attending routine outpatient clinics, HIV support services and specific women's groups. Questionnaires were distributed over a six-month period between January and June 2016.

**Results:** Fifty women completed the questionnaire representing 19% of our female cohort. The average age of those completing the questionnaire was 48-years (range 46-54) which is representative of our cohort. Twenty-five (50%) thought a dedicated women's service would be beneficial. A number of barriers to accessing services were reported. 32% (16/50) disclosed a disability of whom 44% (7/16) found accessing services challenging as a consequence. 36% (18/50) lived in a household with children <16 years of whom 67% (12/18) were uncomfortable bringing their children to clinic. 44% (22/50) had to take time off work/out of education to attend appointments. Of these women 26% (13/50) stated the prospect of this influenced their decision to attend outpatient appointments. 24% (12/50) were influenced by the cost of travel. Concerns about confidentiality, waiting times and sharing a waiting room with male patients were also reported. The morning was identified as the most convenient time for a dedicated women's clinic.

Patients reported a wide range of services that they felt would be beneficial: 27/50 counselling, 24/50 sexual health screening, 22/50 menopause support, 20/50 benefit support, 16/50 cervical cytology, 16/50 outreach services, 13/50 contraception services, 11/50 fertility advice, 10/50 pregnancy support, 4/50 domestic violence support.

**Conclusions:** We need to recognise the needs of women living with HIV and address the barriers they identify in accessing care. Our dedicated women's clinic will aim to address concerns about a child and female unfriendly environment as well as long waiting time. The need of women for a holistic service addressing psychological and social needs in addition to medical and sexual health care will be incorporated into the design of our new, dedicated service which will launch in November 2016.

*Conflict of interest: We have been awarded £11,626 towards launching our women's clinic from Gilead Sciences*

Abstract: O\_06

*Multidisciplinary care of the patient with co-morbidities*

## **Improved function, strength, quality of life and goal attainment in people living with HIV attending a physiotherapy-led group rehabilitation intervention in the UK**

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**Introduction:** A specialist HIV outpatient physiotherapy service, located in a specialist HIV centre, provides individual treatment (1:1) and group treatment (Kobler rehabilitation class). The Kobler rehabilitation class combines physiotherapy-led group exercise and education, twice week for 10 weeks. We evaluated referral patterns, rehabilitation goals, adherence and measurement change.

**Material & Methods:** Over 24 months commencing September 2012, 92 patients were measured for functional capacity (6 minute walk test; 6MWT), flexibility (sit and reach test), upper and lower limb strength (1 repetition max) and health related quality of life (HRQOL) using Functional Assessment of HIV infection (FAHI). Adherence was defined as attending  $\geq 8/20$  sessions. Rehabilitation goals were themed and progression quantified using Goal Attainment Scale. Reasons for non-adherence were identified by retrospective telephone interview.

**Results:** At baseline, referrals were for musculoskeletal (25%), oncological (20%) or cardio-metabolic (19%) reasons among a male (82%), Caucasian (71%) and ageing (mean 51.5 years) cohort. Themed rehabilitation goals included improving body image, participation, mobility, health/fitness and function. Adherence was achieved by 46%, with open access utilised by 37%; returning (n=19) or restarting when non-adherent (n=15). Reasons for nonadherence, identified in 21 (42%) of 50 non-adherent patients, were related to physical and mental health, individual factors like exercising independently, or class features such as

time and location. Post-intervention measurement in 37 (40%) demonstrated improvements in 6MWT distance ( $p < 0.001$ ), flexibility ( $p < 0.001$ ), strength in triceps ( $p < 0.001$ ), biceps ( $p < 0.001$ ), latisimus dorsi ( $p < 0.001$ ), shoulder-press ( $p < 0.001$ ), chestpress ( $p < 0.001$ ), and leg-press ( $p < 0.001$ ). HRQOL improved in total score ( $p < 0.001$ ), physical ( $p < 0.001$ ), emotional ( $p < 0.001$ ) and functional ( $p = 0.065$ ) subscales. Goal Attainment Scale quantified 83% goals scoring 'expected' (n=57), 'somewhat more' (n=31) or 'much more' (n=14) level of achievement.

**Conclusion:** This Kobler rehabilitation class improved functional capacity, strength, flexibility, quality of life and goal attainment, among those completing the intervention. Sub-optimal adherence likely relates to episodic disability, highlighting the importance of rehabilitation interventions to be flexible in nature, allowing individuals to attend dependent on their episodes of health and disability

*No conflict of interest*

Abstract: O\_07

*Innovative approaches to promote long term health in HIV infected*

## **Online sexual health intervention to support MSM directly after HIV diagnosis - The experiences of [www.4mezelf.nl](http://www.4mezelf.nl)**

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**Background:** Men who have just been diagnosed with HIV have specific needs concerning their adjustment to the new realities in their lives. One important aspect of adjustment relates to managing their sexual health. Recently diagnosed MSM are in the midst of adjusting to the new and very diverse implications that their HIV status has for their sexuality. Interacting with health professionals to understand these implications is often perceived as high threshold. We wanted to offer men the opportunity to deal with these issues at their own time and space and therefore increase direct involvement in improving their sexual health post diagnosis.

**Methods:** We developed a website that addresses many of the issues MSM deal with soon after diagnosis (up to 1 year after), with a strong emphasis on managing their sexual health. The internet provides a safe and low threshold environment to deal with the sensitive issues raised by the intervention. In fragile emotional times typical after HIV diagnosis, users can benefit from the fact that they can follow the intervention at their own pace, at the comfort of their home or location of choice and with minimal disclosure to third parties or medical professionals. The content of the intervention was based on results from a formative qualitative and quantitative studies conducted earlier especially for this project. The content of the website is theoretically grounded in the Information Motivation Behavioural skills model by Fisher & Fisher. Usability and acceptability of the website have been evaluated using online questionnaires.

**Results** The presentation will demonstrate how we provide our online tailored module approach, starting from interactive text, through to live chat functions with HIV counsellors, filmed coaches, testimonials, sexual network approach modules, the intervention-

memory function (a function that remembers where you left off last time you used the intervention), and closing with a demonstration of a feature specifically developed for the intervention: 'voluntary tailoring' – a tailoring process that is less intrusive to the users than classical tailoring. The website is currently offered post diagnosis in the STI clinic of the Amsterdam Public Health Service and it is scheduled to be further disseminated nationally. Data on usability & acceptability scores will be presented.

**Discussion:** The website 4mezelf.nl fills an important gap in the immediate post HIV-diagnosis care in the Netherlands. This support is additional to the present care network and offers a low threshold opportunity for men to work on their sexual health as soon as possible after their diagnosis.

*Conflict of interest : The project presented was partially supported by Gilead Sciences*

Abstract: O\_08

*Innovative approaches to promote long term health in HIV infected*

## What “good” looks like. Enhancing the well-being of people with HIV through a Peer Navigator Service

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**Background:** Despite biomedical advances, the quality of life for people with HIV in the UK remains below that of the general population. Psycho-social support complements effective clinical treatment with positive impacts on wellbeing. For many people with HIV, notions of living well with HIV are unfamiliar, role models are few and opportunities under-exploited. We describe a ‘Peer Navigator Service’ (PNS) an innovative clinic based combination of professional and experiential expertise in which care support and advocacy are delivered by people living with HIV.

**Methods:** The Jonathan Mann Clinic (JMC), a statutory/public HIV care service collaborated with Positively UK, a national HIV charity, providing peer support. MAC AIDS Fund provided financial support. Three patients from the JMC were appointed, through a competitive process, to be Peer Navigators. They received accredited training in Peer Mentoring from the Open College Network and joint supervision from the JMC and Positively UK. Peer Navigators’ role involved identifying patients’ needs and priorities, setting action plans, working towards agreed goals and advocating with third party agencies. Internal evaluation of the PNS involved a patient self-assessment using a 10-point Likert scale upon registration, during, and upon exiting the PNS. External evaluation of the programme involved observation, semi-structured group and individual interviews with patients, Peer Navigators and staff, who were selected through purposive sampling. Data were analysed using thematic qualitative analysis in QSR Nvivo 10.

**Results:** Over two years (2014-2016), the PNS was accessed by 104 people with HIV. Seventy nine per cent were women, 70%, black African ethnicity, 80% heterosexual. The PNS identified and met deficiency

and growth needs aligned with Maslow’s hierarchy of needs. Beneficial outcomes noted by service users included increased uptake of non-clinical services such as welfare benefits, and immigration support (70%), improved financial position (53%) and an increase in disclosure and talking to others about HIV (76%). Approximately 50% said their understanding and adherence to treatment had improved with 23% reporting a significant improvement. The common HIV status between Peer Navigators and patients strengthened their relationship, fostered open lines of communication, and enabled Peer Navigators to assume a multifaceted role of peer, truth-teller, confidant, role model, social care services navigator, and life coach. The PNS provided a structured channel for Peer Navigators to help others, which they described as a ‘responsibility’, ‘privilege’, and ‘opportunity’. Being a Peer Navigator formed an important part of their own HIV journey and helped them to meet personal growth needs.

**Conclusion:** The PNS demonstrated that embedding peer support within a clinical space is effective in ensuring prompt access to peer support, information, and advocacy. The involvement of people with lived experiences of HIV provided a clear representation of holistic health and wellbeing which was transformative for patients. Collaboration between clinical and voluntary sectors was crucial to the success of the PNS. The PNS could be used as a model in other centres that wish to provide clinic based holistic care, improve patient wellbeing and equip their patients with the skills and resources required to self-manage their HIV

*No conflict of interest*

Abstract: P\_09

*Multidisciplinary care of the patient with co-morbidities*

## **People living with HIV present with worse health status than elderly people at risk of hospitalisation, when referred to specialist HIV outpatient physiotherapy in the UK**

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**Introduction:** EQ-5D-5L health status measures 5 dimensions: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. A specialist HIV outpatient physiotherapy service, located in a specialist HIV centre, provides individual treatment (1:1) and group treatment (Kobler rehabilitation class).

**Material & Methods:** Over 24 months commencing October 2013, EQ-5D-5L was completed in all referred patients. Change in EQ-5D-5L was evaluated with paired t-test at the end of 1:1 physiotherapy.

**Results:** We reviewed 137 patients; male (83%), median age 52 (range 29– 77), HIV diagnosed >10 years (80%) and undetectable viral load (97%). Pre-intervention EQ-5D-5L health status (% any problem reported, medium score) for mobility (80%, 3.0), self care (56%, 2.0), usual activities (81%, 3.0), pain/discomfort (90%, 3.0) and anxiety/depression (82%, 3.0) and index (0.44), demonstrate worse health status compared to UK population, HIV outpatients and elderly people at 12 month hospitalisation risk. 76 (56%) patients received 1:1 physiotherapy alone (n=15, 11%) or in combination (n=61, 45%) with other interventions. Data was excluded if patients DNAd (n=29, 21%) or treatment continued (n=11, 8%). EQ-5D-5L was repeated in 22 (16%) at cessation of 1:1 physiotherapy alone (n=15, compliance 100%) or combination interventions (n=7, compliance 11%). Post-intervention EQ-5D-5L observed significant improvement in mobility (p=0.002), usual activities (p=0.01), pain/discomfort (p=0.001) and anxiety/depression (p=0.03) with improved % any problem

reported and median score in mobility (55%, 2.0), self-care (37%, 1.0), usual activities (55%, 2.0), pain/discomfort (73%, 2.0) and anxiety/depression (50%, 1.5). EQ-5D-5L index (0.68) improved above index of elderly people at 12 and 24 month risk of hospitalisation.

### **Conclusion:**

There is high prevalence of poor health status in adults with HIV attending specialist HIV physiotherapy. Significantly improved health status was observed in mobility, usual activities, pain/discomfort and anxiety/depression, in patients completing 1:1 physiotherapy alone or in combination with group treatment. Specialist HIV physiotherapy, located in specialist HIV centres, can support multi-dimensional care to optimise health and wellbeing and may reduce risk of hospitalisation.

*No conflict of interest*

Abstract: P\_10

*Multidisciplinary care of the patient with co-morbidities*

## **Presence of complex comorbidity and functional disability when ageing with HIV; review of referrals to specialist HIV outpatient physiotherapy in the UK**

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**Introduction:** A specialist HIV outpatient physiotherapy service, located in a specialist HIV centre, provides individual treatment (1:1) and group treatment (Kobler rehabilitation class). Evaluation of referrals included access, patient profile, health and functional status, and treatments.

**Material & Methods:** Over 24 months commencing October 2013, retrospective evaluation was completed from electronic documentation. Health and functional status were evaluated using ICD-10 online application and ICF checklist version 2.1a.

**Results:** We reviewed 137 patients; male (83%), median age 52 (range 29–77), HIV diagnosed >10 years (80%) and undetectable viral load (97%). Socially 61% unemployed, 71% lived alone, 64% lived locally to hospital and 87% did not meet UK physical activity recommendation. Referrals were mostly from HIV physician (47%), dietician (21%) or physiotherapist (8%) for musculoskeletal (53%), sedentary (12%) or neurological (9%) reasons. Patients lived with median 5 comorbidities (SD 2.4) and 87% meet definition of complex comorbidity;  $\geq 2$  additional chronic conditions in  $\geq 2$  different body systems. ICD-10 subgroups include 'diseases of the musculoskeletal system and connective tissue' (21%), 'mental and behavioural disorders' (13%), 'endocrine, nutritional and metabolic diseases' (11%) and 'diseases of the nervous system' (11%). ICF body function impairments were 'pain' (88%), 'mobility of joint' (75%) and 'emotional function' (71%). ICF

body structure impairments were 'movement of lower extremity' (64%), 'movement of trunk' (53%) and 'spinal cord and peripheral nerves' (32%). ICF activity limitation and participation restriction were 'recreation and leisure' (72%), 'walking' (56%) and 'remunerative employment' (50%). ICF environmental factors were 'social security' (27%), 'products for indoor/outdoor mobility' (22%) and 'immediate family' (18%). Treatments were provided mostly in combination (55%) with 56% requiring 1:1 treatment and 53% accessing the Kobler rehabilitation class. Patients attended mean 1.8 (range 1–6) 1:1 sessions.

**Conclusion:** Patients referred to specialist HIV Physiotherapy present with complex comorbidity, when ageing with well-controlled HIV. The presence of multiple comorbidities was observed with high prevalence of disability and functional challenges including pain, joint movement, mobility, employment and community life. Disability and functional measurement tools could support access and evaluation of specialist HIV physiotherapy.

*No conflict of interest*

Abstract: P\_11

*Long-term toxicities in HIV infected patients*

## Retrospective multicenter analysis on the use of Eviplera in an HIV-infected cohort attending Essex service.

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**Background:** Eviplera (EPV) is a single-tablet regimen (STR) consisting of three antiretroviral drugs, emtricitabine, tenofovir and rilpivirine. It has to be taken with food of at least 400 calories to maintain its efficacy. Various studies have shown that switching to EPV from efavirenz (EFV) or protease inhibitors (PIs) based regimes had resulted in improved toxicity and tolerability. In naïve studies EPV has been shown to be non inferior to Atripla in patients with a baseline viral load (VL) of <100000.

**Methods:** Case notes review of all HIV-infected individuals attending four HIV centers in Essex who are on EPV at the time of analysis. Both switched and naïve patients were included. Data on gender, age, surrogate markers i.e CD4 count, VL, patient reported adverse events, renal and liver parameters (LFTs), cholesterol, patient reported pill and caloric adherence were collected at baseline and at week 4, 8, 12, 24 and 48 respectively.

**Results:** A total of 57 patients were identified. 33 female, 24 male. Median age is 43.36 (63.1%) are switched and 20 (35.0%) naïve patients, 1 unknown. 24 (66.7%) were switched because of EFV related central nervous systems side effects (CNS), 4 (11.1%) for simplification and 8 (22.2%) unknown. 30 (83.3%) were on EFV based regime while, 6 on PIs. In naïve group the baseline VL range from 2530-504526, median 75254.2 patients had VL >100K at baseline. All achieved VL <100 at week 12 and <50 at week 48 with average CD4 increase of 135. No serious adverse events reported by week 48, 9 patients had gastrointestinal upset, 2

musculoskeletal pain, 3 chest symptoms, 2 CNS symptoms, 1 neuralgia and 2 weight issues. 1 patient had deranged LFTs at baseline till week 48, 1 impaired renal function and hypophosphataemia at week 12 and 5 raised cholesterol at week 48. 22/24 (91.7%) of patients switched from EFV had complete resolution of CNS symptoms by week 12 while those simplified reported better adherence due to lower pill burden. Pill adherence were only documented on average 63.5% at each patient visit. 2 reported poor adherence. Only 50.4% of caloric adherence were documented at each visit. One patient struggled to maintain minimum caloric intake and referred to dietitian.

**Conclusion:** EVP is a good alternative for patients who experienced CNS toxicity from EFV or as a regime simplification. Both naïve and switched patients had maintained full virological suppression over the analysis period including the 2 patients who have VL >100k at baseline. EVP has lower pill burden and generally well tolerated. The extra caloric requirement doesn't seem to be an issue for most patients but their compliance needs to be assessed in every clinic attendance.

*No conflict of interest*

Abstract: P\_12

*Long-term toxicities in HIV infected patients*

## Lipodystrophy in HIV/HCV coinfected patient (case report)

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**Introduction:** Lipodystrophy (LD) in HIV-infected patients is complication of long-time exposure, in particular, to first generation antiretroviral drugs (ARD). LD presents with changes in body fat composition and associated metabolic abnormalities. LD has significant role in atherosclerosis development and cardiovascular diseases formation in HIV-infected patients on lifelong antiretroviral therapy (ART). Mitochondrial toxicities of ARD are key aspects of LD pathogenesis.

**Case presentation:** Female patients S. HIV infection (CCR5 - FPR-42,2%) and HCVinfection (3a genotype) was diagnosed in the end of 2009 during pregnancy at age 32. She has started combined antiretroviral therapy (cART) - ZDV, 3TC, LPV/r in April 2010 for prophylaxis of HIV perinatal transmission. After childbirth in 2010, September scheme of cART was changes on ZDV, 3TC, EFV (CD4 count was 160 c/mkl). Liver biopsy (2010, September) revealed hepatitis of the moderate activity with septal fibrosis (the 3rd stage according to Knodell score). Electronic microscopy detected atypical destructed mega mitochondria and significantly expressed steatosis of hepatocytes. She has started PEG INF –alfa-2b in combination with ribavirin since February 2011 (CD4 count – 252 c/mkl, VL HIV<500 cop/ml). During course of HCV antiviral treatment she constantly developed flu-like symptoms after every injection of PEG INF. The CD4 count dropped to 88 c/mkl on the 6th month of PEG INF + ribavirin treatment and EFV was changed on LPV/r.

In 2012, October clinical sings of lipoatrophy in the face and limbs with simultaneous fat accumulation on superior abdominal wall were observed. The body mass decreased on 5 kg (8%). PEG INF –alfa-2b with ribavirin was stopped (total duration of course – 9 months). The patient achieved SVR, but later in June, 2014 the late relapse of HCV infection was revealed. The second liver biopsy done 6 months

after stopping of PEG INF–alfa-2b with ribavirin has fixed morphological response on treatment.

In February 2013, despite the improving of common condition after the stopping PEG INF –alfa-2b with ribavirin clinical sings of LD were presented. Biochemical analysis: total bilirubin – 11,7 mkmol/l, AST – 26,7 IU/l; ALT – 23 IU/l; cholesterol – 5,5 mkmol/l, LPHD - 0,74 mkmol/l, TG – 1,75 mkmol/l. The count of CD4 T-lymphocytes increased until 481 c/mkl, VL HIV was undetectable (<500 cop/ml). Scheme of ART was changed: TDF + FTC, EFV. The patient has received course of detoxication and vitamin therapy, a diet low in fat and cholesterol, aerobic physical activity. Gradually condition of patient improved, clinical signs of lipoatrophy significantly reduced, body mass increased. Presently (June, 2016) patient is in good condition, without complains, she is on cART: TDF + FTC, NVP. Biochemical analysis: cholesterol – 5,5 mkmol/l, LPHD - 1,6 mkmol/l, TG – 0,7 mkmol/l, LPLD – 3,7 mkmol/l, AI – 2,4. The count of CD4 T-lymphocytes is 752 c/mkl, VL HIV<500 cop/ml.

**Conclusions:** In presented case report subclinical manifestation of mitochondrial toxicity proven by electronic microscopy appeared after short course of cART was aggravated by PEG INF –alfa-2b with ribavirin and PI (LPV/r). In this aspect interferon- free regimes for treatment of HCV infection in HIV-infected patients should be widely involved.

*No conflict of interest*

Abstract: P\_13

*Treatment as prevention*

## The problems of antiretroviral therapy in patients with HIV infection: the frequency and causes of discontinuation

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**Introduction:** Over the years of the implementation of the ART in Ukraine, significant positive results have been achieved. Still people are dying while they are on treatment. However, one of the main problems remains the problem of discontinuation and mortality of patients due to several factors.

**Materials & Methods:** The medical records of 450 patients, who started ART in 2009 and followed up until 2013 in Dnepropetrovsk Regional AIDS Center were reviewed. The data collection included the following characteristics: age, sex, educational level, occupational status, functional status, duration on ART, WHO clinical staging and HIV related diseases, reasons for discontinuation of therapy.

**Results:** Characteristics of the cohort of patients were the following: the number of female (256) prevailed over male (194) with ratio 1:1.5. Age analysis showed the predominance of persons of middle age. The median for men was 42.3 years for women-37.4 years. Distribution of the patients according WHO clinical staging: I - 23 (5,11%), II-71 (15,78%), III-117 (26,0%), IV – 239 patients (53,11%). Among the most frequent opportunistic infections and co-infections were: candidiasis (54%), chronic viral hepatitis B and C (17%), TB infection (29%). Out of the total 450 patients starting ART in 2009, their number dropped to 373 in 2010, then dropped to 357 in 2011, and remained stable during 2012-2013 (354). These data showed that the most critical period is 1-st year of ART. Within the first 12 months of ART the number of patients dropped by 17%. The following 2-year period showed relative stable number of patients on ART. But the overall drop of patients to the year 2013 was substantial (21%). Among the reasons for the cessation of therapy were 2 main groups. 1st-group-social and psychological (59.5%): low level of

education, lack of motivation and belief in success, depression, poor treatment adherence, injection drug users. 2nd group- medical factors(40.5%): late start of therapy, side effects, poor compatibility with TB therapy, drug-drug interactions. Of the 16 dead over the years of observation of 12 patients died within 1 year of therapy. The next 2 years showed obvious positive results. Patients continued ART and mortality was significantly reduced.

**Conclusion:** ART in HIV patients significantly increases life expectancy and reduce mortality. However the first year of ART is most critical for patient. We need to take into account all the factors that can be case of the discontinuation of ART and impact on its efficacy.

*No conflict of interest*

Abstract: P\_14

*Unique challenges in the Aging HIV patient*

## Characteristics of HIV infection in patients over 55 years of age

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**Background:** The prevalence of HIV infection among elderly people is relatively high in Ukraine. Aging immune system increases the risk of certain HIV associated diseases and influence the therapy efficacy. The goal of the study was to determine social, demographic, clinical and laboratory characteristics of HIV infected patients over 55 years of age.

**Materials & Methods:** Analysis included retrospective data from 29 medical records of HIV-infected patients aged over 55 years of Center of Prevention and Control of AIDS (Dnipro, Ukraine).

**Results:** The mean age of patients was 62.86 years (56 -77 years; SD=6.11). Most of the patients (n = 19; 65.5%) were 56-65 years of age; 9 patients (31%) – 66 – 75 years, one patient – 77 years. Males constituted the majority (n=18; 62.3%). 72.4% of patients were infected through sexual contact. Most patients (n=16; 55.2%) were taken under supervision in 2013-2015 years. Mean duration of the period from the diagnostics of HIV-infection was 4.55 years (SD=3.24).

In all patients was diagnosed progressive stage HIV: fourth (n=26) and third (n=3) HIV clinical stage. 9 (31.3%) of patients before antiretroviral therapy start had low CD4 count ,<50 cells/ $\mu$ L. Only eight patients (27.5%) had absolute CD4 count above 200 cells/ $\mu$ L. Median CD4 cell count on the beginning antiretroviral therapy was 53 cells/ $\mu$ L (range 2 – 333), after therapy beginning increased to 253 cells/ $\mu$ L (range 62 – 823). Median HIV viral load at the beginning was 383.204 copies/mL (range 7613–3.587.252).

All the patients received antiretroviral therapy. The first-line therapy was ineffective in 2 patients (tenofovir + lamivudine + efavirenz replaced by zidovudine+ lamivudine + darunavir and in the second

case changed to zidovudine + lamivudine + lopinavir/ritonavir). Reduction of viral load less 40 copies / mL using the first line antiretroviral therapy was achieved in majority of patients (n=27, 93.1%).

Tuberculosis and tumors were leading in the structure of HIV-associated diseases. 8 patients were diagnosed with tuberculosis (5 – pulmonary tuberculosis, 3 – extrapulmonary tuberculosis: bone, intrathoracic lymphatic nodes and eyes). Tumors were diagnosed in 6 cases: Kaposi's sarcoma, skin cancer, breast cancer (2 cases), B-cell lymphoma (2 cases). One patient with skin cancer and one with B-cell lymphoma showed tumor regression with antiretroviral therapy (in both cases abacavir + lamivudine + efavirenz). Cachexia and ?neumocystis pneumonia were both diagnosed in 3 cases each. One patient had stroke. In 2 patients CMV chorioretinitis and tuberculosis occurred as a manifestation of immune reconstitution syndrome.

**Conclusions:** Prevalence of males and sexual way of transmission, diagnosis at late stages of HIV requires further prophylactic activities in this age group. The effectiveness of first-line ?ntiretroviral therapy was probably due to the high level motivation and adherence to therapy. Influence of therapy on HIV-associated tumor regression demands further investigation.

*No conflict of interest*

Abstract: P\_15

*Unique challenges in the Aging HIV patient*

## **Clinical audit: Review of the uptake of recommended recognized n for vaccine-preventable infections in 100 patients living with HIV in London**

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**Introduction:** Vaccination is an important preventive measure in people living with HIV. Evidence shows that certain infections remain more prevalent in people living with HIV even in the era of effective antiretrovirals. Publications about vaccination among HIV-infected patients are sparse and coverage rates appear insufficient for vaccine-preventable infections. There is a paucity of evidence to guide recognized n practices in this population, although the importance of an effective recognized n programme seems to be recognized by national and international bodies, such as the British HIV Association (BHIVA) and the Centers for Disease Control and Prevention, and new recommendations have recently been published. In our hospital, we have been concerned about the correct implementation of these recommendations in practice. This audit aimed to assess the uptake of vaccines in the light of current recommendations in a random sample of 100 HIV-infected patients in London.

**Materials & Methods:** 100 patients' cases were randomly selected from our specialist clinic. GP details, demographics, country of origin, years lived in the UK, date of HIV diagnosis and route and place of infection acquired were collected from our electronic database. Immunisation history was requested from the GP. The results were audited to the standards defined by the BHIVA guidelines on the use of vaccines in HIV-positive adults 2015. Currently, the following six vaccines are recommended (with consideration of CD4 count) for patients living with HIV: Hepatitis B, Influenza, Pneumococcus conjugated, Mumps Measles Rubella, Varicella Herpes Zoster vaccines. Additionally, the following seven vaccines have age/gender/at risk related recommendations: Human

Papilloma Virus, Hepatitis A, Meningococcus C, ACWY and B, Pertussis, Pneumococcus polysaccharide vaccines.

**Results:** Records for 3 patients were unavailable. Of the 97 reviewed cases, male/female ratio was 43/59 with median age of 48. 37 patients were from the UK and of the non-UK origin, 50 were from Africa. Years lived in the UK ranged from 5 to 40 years among patients with non-UK origin. 64 patients acquired HIV during heterosexual intercourse, 26 were men who have had sex with men and in 4 cases the route of infection was via Mother-to-child transmission. One patient was an intravenous drug user and in one case the route of infection is unknown. 48 patients contracted HIV in the UK, the others primarily in Africa. Of the 71 immunisation histories received, 6.1% of patients received one, 5.1% received two and three doses and 2% received one additional booster of Hepatitis B vaccine. 36% and 25.7% had influenza vaccination in the seasons of 2014/15 and 2015/16 respectively. 32.9% had Pneumococcus, 2.1% had Pertussis and 7.2% had Meningococcus vaccination. 24.7% received one dose and 9.2% received two doses of Hepatitis A vaccine. 29 patients had evidence of Diphtheria and Polio, 19 of Typhoid, 34 of Tetanus and 3 of Yellow fever vaccination.

**Conclusion:** Vaccination coverage in adults living with HIV in London appears insufficient when audited against current recommendations. Strategies should be developed to aim to improve this.

*No conflict of interest*

Abstract: P\_16

*Multidisciplinary care of the patient with co-morbidities*

## **A psychological approach of the HIV romanian young cohort-future of the past and a commitment for tomorrow**

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**Background:** HIV infection causes in the patient the development of specific attitudes toward diagnosis, leading even to a psychological change in the patient's personality expressed by a certain type of mental, emotional and behavioral participation, variable time depending on the stage of infection. The children of the Romanian cohort have an emotional and behavioral baggage marked by depression, anxiety, adjustment disorder, acquired a pronounced psychological fragility, with major impact in medical condition, that means non-adherence, suicide attempts etc. The disclosure of diagnosis (DD), adherence and desire of a family are defining notes describing these patients. Another specific issue related this cohort is the HIV neurobehavioral disturbances expressed by HIV neurocognitive disorders (HAND) and emotional and behavioral impact.

**Methods:** Psychological intervention allows changing patterns of thinking and behavior of patients, by unlearning negative experiences and relearning of the experiences with positive value. Counseling and psychotherapy are methods through the HIV patient identify alternative behaviors that learn to operate adapted biological and psychological age. DD was a first stage in caring of HIV children, aimed the understanding and acceptance the experiences related HIV diagnosis.. If the HIV infected child had not adherence issues, the adolescent with HIV had serious adherence problems, both because of the fragility of age, but especially because of therapeutic fatigue. The age of young HIV adult brings forward the couple relationship, when all behaviors come early: love, desire starting a family, the child. Also, the full neuropsychological evaluation that tested

at least 6 cognitive domains demonstrated efficacy in diagnosing neurocognitive impairment in our Romanian HIV cohort

**Results:** DD determined changing of the personal beliefs associated with a diagnosis perceived as serious, leading to living with HIV diagnosis, through a permanent redefinition of their limits and psychological resources. DD remove distorted perception of this diagnosis, which would have led to a defensive attitude to disease and thus compromise adherence. The HIV patients who accept the diagnosis have a good adherence, those who deny the diagnosis have a compromise adherence and those who resign, are not interested about their own life have a very poor adherence. The couple patterns which are adjusted, functional and congruent has significantly influence the adherence of each partner. The scores of neurocognitive evaluation are significantly correlated with the exposure to ART during over 20 years of infection and moreover with their lifetime under ART with CNS penetration effectiveness ranks>7 from the beginning of treatment.

**Conclusion:** The management of HIV infection involves a psychological component which intervenes in the medical condition. Living with the diagnosis means that the patient learns to live with HIV representation, adapts to changes which become permanent and redefinition of own psychological resources. An arch over time proves that the defining landmarks in the 20 year old child are found in the course of their children: who and how will disclose the HIV diagnosis, theirs or their parents, repeated experiences of their parents? History will become the future?

*No conflict of interest*

Abstract: P\_17

*Innovative approaches to promote long term health in HIV infected*

## Probiotics in HIV Infection: A Systematic Review of Benefits and Risks

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**Introduction:** The impact on the host microbiome of HIV infection, antibiotics and other medications, has wide-ranging effects, including diarrhea, bacterial vaginosis and increased risk of HIV transmission/acquisition. Probiotics are thought to reduce bacterial translocation from the gut and thus inflammation in HIV. Probiotic supplementation is increasingly popular with the general public, with people living with HIV, and with health care providers. Meta-analyses and systematic reviews have found probiotics to be effective for prevention of antibiotic-associated diarrhea, ventilator-associated pneumonia, necrotizing enterocolitis and other conditions. However, concerns remain about probiotics' safety, especially the risk of serious infection (bacteremia, fungemia, septicemia). There have been numerous case reports of probiotic organisms potentially causing bloodstream infection, but we found no studies that provide numerical estimates of the risk. This study fills a gap in the literature by providing a numerical estimate of that risk.

**Methods:** We performed a systematic review of the effect of probiotics in individuals with HIV and a meta-analysis of sepsis risk. We undertook a protocol-driven, comprehensive review to identify all relevant studies, assess their quality and summarize the evidence. Data sources accessed included MEDLINE, EMBASE, the Cochrane Central Register of Controlled Trials, Cochrane Reviews, AEGIS,AMED,

CINAHL, Google Scholar and the World Health Organization. We reviewed and combined data from randomized control trials (RCTs) in people with and without HIV where probiotics were administered and risk of sepsis arising from bloodstream infection was explicitly assessed. We derived a risk estimate and number needed to harm (NNH) using Bayesian analytical methods; we approximated the posterior median of the NNH by Markov chain Monte Carlo with OpenBugs software.

**Results:** Of 2,068 references, papers reported on diarrhea (9 papers), CD4 count (13), adverse events (11), bacterial vaginosis (1), and bacterial translocation (4). The data are inconclusive but suggest possible benefits for CD4 count, diarrhea management, and recurrence or management of bacterial vaginosis.

We examined any randomized, controlled studies explicitly assessing sepsis and found zero (0) cases of supplement-associated bloodstream infection in 39 randomized controlled trials comprising 9,402 subjects, which included 379 with HIV and 9,023 without HIV. We calculated the median estimated NNH to be 7,369 in our Bayesian approach (95% credible interval: 1,689, ∞); that is, given the studies we found, there is a 95% chance that more than 1,688 people would have to take probiotics to find one case of bloodstream infection, and a 50% chance that the number is higher than 7,369. No or only mild adverse effects were reported.

**Conclusions:** As for the most feared risk of probiotics, bloodstream infection, our NNH should provide some reassurance, whether one adopts the midpoint estimate (7,369) or, more conservatively, the 95% lower bound (1,689), in comparison to the risks of many commonly prescribed conventional medications. Extant data suggest sepsis risk is very low, however monitoring patients using probiotics could provide additional assessments of patient-reported benefits or adverse events. Longer duration studies investigating different individual and mixed strains for plausible indications are needed to establish best practices and clear indications.

*Conflict of interest: Supported in part by grant no. 1R01AT005824-01 from National Institutes of Health, National Center for Complementary and Alternative Medicine*

