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Abstracts

1

Baseline resistance-guided therapy does not enhance the response to interferon-free treatment of HCV infection in real life

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Background: Hepatitis C virus (HCV) response to direct-acting antivirals (DAAs) may be influenced by the presence of resistance-associated substitutions (RASs). Our objective was to assess if NS5A baseline RAS guided treatment enhances the rate of sustained viral response (SVR) in naïve HCV-infected patients in clinical practice.

Materials and Methods: In this prospective observational study, all HCV-infected patients who initiated treatment with interferon (IFN)-free DAA based regimens between March 2016 and May 2017 in 17 Spanish hospitals were included. Patients had to be DAA naïve, with the exception of sofosbuvir with/without IFN. Patients with premature discontinuations or missing SVR data were excluded. In one hospital, participants received therapy guided by the presence of NS5A-RASs, which were determined by Sanger techniques –resistance-guided treatment (RGT) population-. Patients enrolled in the remaining hospitals, in whom baseline RASs were not tested, constituted the control population. The rates of SVR 12 weeks after the end of therapy (SVR12) in these two populations were compared.

Results: A total of 120 and 512 patients were included in the RGT and control populations, respectively. Nine (7.5%) individuals in the RGT population showed baseline NS5A-RASs. All of them achieved SVR12. The SVR12 rate in the RGT population was 97.2% (three relapses) whereas it was 98.8% (six relapses) in the control population (p=0.382).

Conclusions: Testing for baseline NS5A-RASs in naïve HCV-infected patients does not enhance the rate of SVR to DAA-based IFN-free therapy in clinical practice.

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Response to sofosbuvir/ ledipasvir for 8 or 12 weeks in HCV-monoinfected and HIV/HCV-coinfected patients in clinical practice

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Background: Treatment with SOF/LDV for 8 weeks produces high rates of SVR in patients monoinfected by HCV genotype 1 (HCV-G1), provided that patients are naïve for treatment, are not cirrhotics, and with that their baseline HCV viral load is <6 MIU/mL. SVR rates to AAD in patients coinfected with HIV and HCV are slightly lower than those observed in monoinfected with HCV. However, there is little comparative data of real-life efficacy of this strategy between monoinfected and coinfected patients. Thus, we aimed at comparing the efficacy of SOF/LDV during 8 weeks between HCV-G1-monoinfected patients and HIV/HCV-G1-coinfected patients.

Patients and Methods: In the HEPAVIR-DAA and GEHEP-MONO cohorts, HCV-G1-infected patients were selected if they fulfilled: 1) Not pretreatment; 2) Absence of cirrhosis; 3) Treatment with SOF/LDV for 8 or 12 weeks; 4) Evaluable SVR 4 weeks after completing treatment (SVR4). Patients with baseline HCV RNA ≥6x106 IU/mL were excluded. SVR4 rates of HCV-G1-monoinfected and HIV/HCV-G1-coinfected patients were compared by intention to treat (ITT). The responses (ITT) were compared between treatment durations of 8 and 12 weeks.

Results: Of 218 patients with SOF/LDV planned for 8 weeks, 191 patients were included, 105 (57%) HCV-G1-monoinfected and 86 (43%) HIV/HCV-G1-coinfected patients. Of the 1288 patients with SOF/LDV scheduled for 12 weeks, 253 met the criteria to be treated 8 weeks, 131 (48%) HCV-G1-monoinfected and 122 (52%) HIV/HCV-G1-coinfected patients. The response rates for HCV-G1-monoinfected vs. HIV/HCV-G1-coinfected patients: SVR4, 102 (97%) vs. 81 (94%), p=0.310; relapse, 0 vs. 4 (4.7%), p=0.040; discontinuations due to adverse events, 1 (0.95%) vs. 0, p=1.0; drop-outs, 2 (1.9%) vs. 1 (1.2%), p=1.0. Response rates for 8 vs. 12 weeks in patients with criteria to receive 8 weeks were: 1) HCV-G1 monoinfection: SVR4, 97% vs. 99% (p=0.326); relapses, 0% vs. 0.8% (p=1.0); 2) HIV/HCV-G1 coinfection: 94% vs. 97% (p = 0.493); relapses, 4.7% vs. 0% (p = 0.028). Among the four HIV/HCV-G1-coinfected patients, resistance testing at relapse was available in two of them. In them, no resistance associated substitutions were observed.

Conclusions: HIV/HCV-G1-coinfected patients reach high rates of SVR4 with SOF/LDV for 8 weeks, although with a higher probability of recurrence than HCV-G1-monoinfected patients. Given that relapses to SOF/LDV during 8 weeks could be easily retreated, this is an option that can be considered in HIV/HCV-G1-coinfected patients.

3

Real life results of grazoprevir/elbasvir in HCV-infected PWID: the Zepalive study

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Background: Grazoprevir/elbasvir (GZR/EBR) has demonstrated high efficacy and tolerability in a variety of settings. In the setting of drug use, GZR/EBR is supported by a specific clinical trial dedicated to drug users on opiate agonist therapy (OAT). In the C-EDGE Co-STAR trial, the rates of SVR were within those found in the rest of the C-EDGE- C programs. In real life conditions of use, there is a potential for a lower efficacy, particularly of a greater rate of reinfections, and more frequent severe adverse events. Thus, we aimed at evaluating the SVR rates of GZR/EBR among PWID with and without OAT in real life conditions of use.

Methods: The HEPAVIR-DAA cohort, recruiting HIV/HCV-coinfected patients (NCT02057003), and the GEHEP-MONO cohort (NCT02333292), including HCV-monoinfected individuals, are ongoing prospective multicenter cohorts receiving treatment against HCV infection in clinical practice. Patients starting GZR/EBR included in the HEPAVIR-DAA or the GEHEP-MONO cohorts were analyzed. Overall SVR4 and SVR12 (ITT), discontinuations due to adverse effects and drop-outs were evaluated. The same analysis was carried out for PWID with and without OAT.

Results: 173 patients have started GZR/EBR in the cohorts, 135 (78%) were PWID and 31 (18%) were on OAT. 71 (41%) individuals were coinfected by HIV. 121 (70%) were men and the median (Q1-Q3) age was 48 (37-55) years. HCV genotype distribution was: 1a, 34%; 1b, 35%; 1 other subtype 7%; 4, 24%. Twenty-eight (16%) patients presented cirrhosis. All treatments were scheduled for 12 weeks without ribavirin (RBV), but for 6 patients (3.5%) (5 cirrhosis, 1 dialysis) planned for 16 weeks with RBV. None of the patients starting GZR/EBR have dropped out. No treatment has been discontinued. 55 patients with evaluable response have reached SVR4, yielding an SVR rate (95% confidence interval) of 98% (90%-100%). Of those, 17 (31%) were not PWID, 11 (20%) were PWID on OAT and 27 (49%) were PWID not on OAT. A breakthrough occurred in one patient.

Conclusion: In this preliminary analysis, the SVR rates achieved with GZR/EBR were high in real life conditions of use. This drug combination seems a safe and effective option for PWID with and without OAT managed outside the clinical trial setting.

4

A comparison of single and multiple tablet regimens for the treatment of HCV infection among HIV co-infected individuals

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Background: HIV co-infected individuals have been prioritized to receive HCV therapy with currently available all-oral regimens. Although clinical trials have shown equivalent efficacy in this population, this has not been formally evaluated in clinical practice, nor has the comparative efficacy of single and multiple tablet therapies been addressed, particularly in current/recent people who inject drugs (PWID).

Materials & Methods: We undertook a retrospective analysis of all patients receiving oral HCV treatment regimens at the Vancouver Infectious Diseases Centre between 03/14-12/17, 42% of whom were current/recent PWID (recreational drug use documented in the previous 6 months). Patients enrolled in clinical trials were excluded. The primary outcome was achievement of a sustained virologic response (SVR). The correlates of therapeutic success evaluated in this analysis were HIV co-infection status and the use of single (Epclusa/Harvoni/Zepatier) versus multiple tablet regimens (all others). Statistical analyses were done using Chi square and logistic regression models with SPSS IBM V24.

Results: There were 218 patients eligible for evaluation, 33 co-infected with HIV (33/33 with full response to antiretroviral therapy). SVR was achieved in 90.8% (168/185) mono-infected versus 84.8% (28/33) co-infected individuals (p=0.343). In mITT analyses, the results are 96.6% (168/174) and 87.5% (28/32) (p=0.051) respectively. Among subjects receiving multiple (n=99) versus single (n=107) tablet regimens, SVR rates were 93.9% versus 96.3% respectively (p=0.526). Among co-infected patients, SVR was achieved in 90.5% (19/21) in those in single tablet regimens versus 81.8% (9/11) in those on multiple tablet regimens (p=0.054). The factor HCV mono-infection was associated with SVR achievement [OR: 4.5; CI: 95% (1.08-18.7); p= 0.039] among independent variables included in the logistic regression (i.e. recent injection drug use, cirrhosis, multiple regimens).

Conclusions: High SVR rates were documented among PWID receiving all oral HCV therapies, with no significant difference between mono-infected and HIV co-infected individuals. There is a trend towards increased efficacy in those receiving single tablet regimens. This trend will be further explored in long-term follow-up of larger numbers of individuals.

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Follow-up of sustained virological responders with hepatits C/HIV co-infection and advanced liver disease

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Background: The introduction of direct-acting antivirals (DAA) has increased sustained
virological response (SVR) rates in patients with advanced liver disease and HIV/HCV co-infection. However, data on clinical outcome and risk of liver complications after successful DAA therapy is scarce.

Methods: Prospective study of HCV/HIV co-infected patients with advanced liver disease (F3 or F4) treated with DAAs from February 2015 to October 2016. We analyzed their baseline characteristics and their evolution until one year after SVR12. Patients without SVR were excluded.

Results: We included 156 co-infected patients with advanced liver disease and SVR. Most of the patients were male (88.5%) and intravenous drug users (96%). Genotype 1 was the most frequent (76.3%). All patients were under HAART, mean CD4+ cell count was 624/mm3 and 96% were suppressed. Forty-nine patients were F3 and 107 were F4. Within F4 population, 40 patients (37.4%) had a transient elastography (TE) value above 25 kPa. Four patients had baseline MELD above 16 points.
One year after SVR12, there was significant decrease in TE: from 10.5 kPa to 6.6 kPa in the F3 population (p<0.001) and from 26.7kPa to 15.9kPa in the F4 population (p<0.001). Of the four patients with baseline MELD above 16 points, all showed improvement to values below this cut-off. Of the 12 patients that had previous history of hospitalization due to chronic hepatic disease, only one had liver decompensation requiring new admission, ultimately needing a liver transplant. Three other patients developed a liver-related event, including one case of newly diagnosed esophageal varices, one patient with de novo hepatocellular carcinoma and one with hepatorenal syndrome. The two latter (F4) died and another patient (F3) died with an infectious event non-liver related (mortality rate 2%).

Conclusion: In our cohort, in the twelve months after SVR12, liver fibrosis significantly improves in both F3 and F4. Furthermore, there is a low hospitalization and mortality rate. However, despite treatment of HCV infection, four patients presented liver disease progression and life-threatening events, pointing out the necessity of surveillance

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Long-term changes of liver stiffness after the use of all oral DAA regimens

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Background: The impact of all oral direct antiviral agents (DAA) interferon (IFN)-free regimens on liver stiffness (LS) is not known. As LS predicts clinical outcome of liver disease, information of the long-term changes of LS after SVR to DAA is of interest. Our objective was to assess long-term changes of LS in HCV-infected patients undergoing a DAA IFN-free treatment.

Methods: Prospective cohort study conducted at a single tertiary care hospital in Spain (2013-2017). Inclusion criteria were: 1) Chronic hepatitis C; 2) Treatment against HCV with a DAA IFN-free regimen; 3) SVR12 evaluable; and 4) LS assessment at the start of treatment and 48 weeks after the end of therapy available. The changes of LS were assessed by means of Wilcoxon test. Besides, patients were classified in different categories according to LS values (< 7.2 kPa, 7.2-9.5 kPa, 9.5-12.4 kPa, 12.5-20.9 kPa y ≥ 21 kPa). The proportion of patients who experienced a change of category after therapy was also analyzed.

Results: 60 patients started a DAA IFN-free regimen during study period and fulfilled inclusion criteria. Genotype distribution: 1a n=18 (30%), 1b n=15 (25%), 2 n=1 (1.7%), 3 n=8 (13.3%) and 4 n=18 (30%). 35 (58%) had HIV infection and 32 (53.3%) had a LS ≥ 12.5 kPa at baseline. DAA regimens were: Sofosbuvir + Ledipasvir ± Ribavirin (RBV), 26 (43.3%); Sofosbuvir + Simeprevir ± RBV, 13 (21.7%); Sofosbuvir + Daclatasvir ± RBV, 7 (11%); Sofosbuvir + RBV, 4 (6.7%); Paritaprevir/ritonavir + Ombitasvir + Dasabuvir ± RBV, 5 (8.7%); Paritaprevir/ritonavir + Ombitasvir ± RBV, 3 (5%) and Grazoprevir + Elbasvir, 2 (3.3%). Globally, 57 (95%) patients achieved SVR12, while relapse occurred in 3 (5%). The median (Q1-Q3) LS at baseline was 13.6 (8.5-26.7) kPa whereas it was 10.4 kPa (6.8-19.4) at the SVR12 evaluation point (p<0.0001). At 1 year after treatment completion, the median (Q1-Q3) LS was 9.5 (6.1-17.3) kPa (p<0.0001 for the comparison with LS at baseline and p=0.02 for the comparison with LS at SVR12). The median (Q1-Q3) decrease of LS 1 year after the end of DAA was 2.6 (0.8-9.7) kPa. When LS was assessed as a categorical variable, 28 (46.7%) patients achieved a regression of at least 1 category of LS, 28 (46.7%) did not experienced changes and 4 (6.6%) showed progression of at least 1 category. In 13 (24.5%) out of 19 patients with baseline LS ≥ 7.2 kPa, 11 (34.3%) out of 32 with LS ≥ 12.5 kPa and in 7 (36.8%) out of 19 with LS ≥ 21 kPa, LS decreased to values below these thresholds.

Conclusions: DAA IFN-free regimens promote rapid and significant decreases of LS in the first year after its use in HCV-infected individuals. Our data confirm that LS continues to decrease after the achievement of SVR. One year after the use of DAA, a quarter of the patients with fibrosis of any grade prior to therapy show complete reversal of fibrosis and a third of patients with cirrhosis show LS decreases suggestive of reversal of cirrhosis.

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Liver fibrosis regression post-direct acting antiviral therapy in HIV and HCV infection

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Background: New direct acting antiviral (DAA) medications to treat HCV infection have attained sustained viral response (SVR) rates well above 90% in most patient populations. SVR from interferon-based regimens have been associated with fibrosis regression over time, but less is known about regression following DAA therapy. Short-term follow-up has suggested initial rapid improvement in fibrosis during DAA treatment that is then followed by a plateau in regression measurements. This plateau in regression indicates the need for longer-term follow-up to further differentiate true fibrosis regression from early improvements in inflammatory liver characteristics seen with DAA treatment. We evaluated liver fibrosis regression following DAA therapy among HIV/HCV co-infected (HIV+/HCV+) treated men with comparisons to HIV/HCV co-infected (HIV+/HCV+) untreated men and HIV mono-infected (HIV+) controls.

Material and Methods: Men were recruited from two infectious disease clinics in the Washington, DC from June 2013 to January 2017. FibroScan® measurements and medical record data were collected annually. Patients with three years of follow-up were included in the analyses. The distribution of the population's age, race, AST (U/L), ALT (U/L) and liver stiffness measurement (LSM) result was described and stratified by treatment group. Repeated measures models were used to calculate and test the difference in the age adjusted least square means of LSM, AST and ALT, separately, between the three treatment groups at each follow-up visit. Multiple comparisons were performed using a Bonferroni adjustment. A p-value less than 0.05 indicated a statistically significant difference.

Results: There were 22 HIV+, 10 HIV+/HCV+ treated, and 4 HIV+/HCV+ untreated men (N=36) with three years of follow-up. 72.2% were between 45 and 64 years and 72.2% reported being White. Among the 14 HIV+/HCV+ men, 10 (71.4%) reported DAA treatment during follow-up. At baseline, there was a significant difference in age adjusted least square means of LSM between HIV+/HCV+ treated and HIV+ men (10.7; 95% CL: 12.2-19.4; p=0.0002) and between HIV+/HCV+ treated and untreated men (11.6; 95% CL: 1.9-21.3; p=0.0229). There were also significant differences in AST and ALT between HIV+/HCV+ treated and HIV+ men of 22.5 (95% CL: 8.0-36.9; p=0.0025) and 25.9 (95% CL: 9.9-41.9; p=0.0023), respectively. At 1st year follow-up, the difference in LSM between HIV+/HCV+ treated and HIV+ men remained statistically significant (7.0; 95% CL: 1.0-13.0; p=0.0267) and was no longer significant between the HIV+/HCV+ treated and untreated men. There were no differences observed between treatment groups in AST and ALT. At 2nd year follow-up, there were no longer any significant differences among the treatment groups in LSM, AST and ALT. Three separate repeated measures analysis model demonstrated a statistically significant interaction between time and treatment groups in LSM (p=0.0008), AST (p=0.0212), and ALT (p=0.0193), separately.

Conclusion: There is a decline in LSM, ALT and AST post-DAA therapy at 1 year follow-up among this sample of HIV+/HCV+ men. Measurements were similar for treated vs. not treated at the 1 year follow-up with all groups being similar at two-year follow-up. Three to four year follow-up is currently underway to elucidate matrix repair from inflammatory improvement.

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Failure rate of ultrasound surveillance of hepatocellular carcinoma in HIV-infected patients

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Background: Surveillance of hepatocellular carcinoma (HCC) by hepatic ultrasound (US) every 6 months is recommended in HIV-infected patients with cirrhosis. However, there are no specific studies addressing the performance of such strategy in this population. As it has been reported that HCC could have a more aggressive course in the HIV-infected patient, the effectiveness of this surveillance policy needs to be evaluated in this specific scenario. The objective of this study was to assess the proportion of HIV-infected patients diagnosed of HCC soon after a normal surveillance US.

Methods: The GEHEP-002 multicentric cohort (ClinicalTrials.gov ID: NCT02785835) recruits HCC cases diagnosed in HIV-infected patients from 32 centers from Spain. For this analysis, HCC cases diagnosed within an US screening program were selected. Surveillance failure was defined as the diagnosis of an HCC within the first 3 months after a previous surveillance US not showing hepatic nodules. The characteristics of HCC cases after surveillance failure were compared with the remaining HCC cases diagnosed by screening.

Results: 186 (54%) out of 341 HCC cases recruited in the GEHEP-002 have been diagnosed within an US screening program. Of them, 16 had a normal US in the preceding 3 months. Thus, the rate of HCC diagnosis after US surveillance failure was 8.6%. HCC was associated with HCV infection in these 16 cases. HCV genotype 3 infection was responsible for 5 (31%) out of the 16 cases after surveillance failure vs 43 (25%) among the remaining 180 cases diagnosed by screening (p=0.5). Two (12%) cases of those occurring after surveillance failure and 19 (11%) among the remaining cases were diagnosed after the consecution of SVR (p=0.7). There was a trend for a higher frequency of multicentric presentation [9 (60%) vs 74 (44%), p=0.2] and portal thrombosis [6 (37%) vs 40 (23%), p=0.2] among HCC cases after surveillance failure. Thus, 10 (62.5%) of them were diagnosed at advanced stage (BCLC stage C or D) whereas this occurred in 76 (45%) of the remaining cases (p=0.1). The proportion of HCC cases diagnosed in early stage (BCLC stage 0 or A) in the entire cohort was 38% whereas it was 39% if only HCC cases diagnosed by screening were considered. Conversely, in a previously published cohort of HCC cases in non-HIV infected patients in Spain, the proportion of HCC cases at early stage was 54% in the entire cohort and 71% among cases diagnosed by screening.

Conclusions: A significant proportion of HIV-infected patients are diagnosed of HCC soon after a previous normal surveillance US. HCC cases after US surveillance failure tend to show more advanced presentation at diagnosis. US surveillance does not seem to translate into an earlier HCC diagnosis in HIV-infected patients. A HCC surveillance policy based on the performance of an US every 6 months might be insufficient in HIV-infected patients with cirrhosis.

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CD4-T cell and metabolic changes after DAAs: a multicenter case-control study

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Background: In the setting of HIV, HCV infection has been associated with increased cardiovascular risk and worse HIV infection outcome. The aim of this study was to evaluate immunological recovery and metabolic changes after HCV eradication with direct active agents (DAAs) in a cohort of HIV-infected patients.

Material and methods: Multicenter case-control study. Patients of 20 Italian Infectious Diseases centers participating in the SCOLTA (Surveillance Cohort Long-Term Toxicity of Antiretrovirals/Antivirals) Project were evaluated. HIV+/HCV+ patients with sustained virological response (SVR) to DAAs (G1) were compared to HIV+/HCV- concurrent patients enrolled in the same study (G2) and to HIV+/HCV+ HCV-RNA+ self-controls (G3). Matching variables for G1 and G2 were duration of antiretroviral therapy, sex and CD4-T cell count. Baseline (BL) was defined the beginning of DAAs for G1 and 1 year before the starting of DAAs for G3. All patients were on a stable antiretroviral regimen (ART) for at least 3 months. Changes of CD4-T and CD8-T cells, total cholesterol (TC), HDL and LDL, triglycerides (TG), glycaemia (GY) from BL to 12 month follow-up (12m-FU) were compared in groups G1/G2 and G1/G3.

Results: One hundred and thirteen patients were included in each group. Mean age was around 50 years with no differences between groups. Seventy five (22.1%) patients were female, equally divided in each group. Of G1, 72 (63.7%) patients had cirrhosis, 71 (62.8%) received a sofosbuvir-based treatment and 72 (63.7%) a 12-week DAA treatment. Thirty-eight (33.6%) switched ART before DAA initiation. At BL, G1 and G2 were similar in terms of CD4+ cell count, CD4/CD8, HDL, TG (p>0.05 for each variable), while G1 had lower CD8+-T cells (p=0.03), CT (p<0.0001), LDL (p<0.0001) and GY (p=0.02) than G2. All considered variables did not differ between G1 and G3. At 12m-FU, after multivariate analysis (including study variables and type of ART), CD4 and CD8-T cells count, TC, LDL and TG levels were higher in G1 than in G3. When compared to G1, similar CD4-T cell changes but lower CD8-T cells, TC, HDL and LDL variations were found in G2.

Conclusions: After DAAs treatment, CD4-T cell recovery of HIV+/HCV+ was similar to HIV+/HCV- patients, but significantly higher than HIV+/HCV+ HCV-RNA+ self-controls. Increase of CD8-T cell count and blood lipids were much more higher in cases than in controls. While HCV eradication improves immune control of HIV, immune-activation and lipid metabolism may be a matter of concern in coinfected patients.

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Expression of immunological markers in inflammatory infiltrate cells of liver tissue in patients with HIV/HCV coinfection

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Background: Liver pathology leads to change of liver lymphocytes composition results in inflammatory infiltrate cells of liver tissue (IICL) formation.
Aim of study: to evaluate the expression of immunological markers in IICL in patients with HIV/HCV coinfection.

Material & Methods: anti-human CD4, anti-human CD8, anti-human CD20, anti-human CD56, anti-human HLA-DP, DQ, DR antigen, anti-human CD68 and polyclonal rabbit anti-Herpes Simplex Virus 1 and 2 types in standard dilution (DakoCytomation) and goat antibodies anti-human CD195 (CCR5) and anti-human CD184 (CXCR4) (AbDserotec) were used. Expression of markers were evaluated in IICL in paraffined autopsy liver tissue in 2 groups of patients: 1st group - 18 patients with HIV/HCV (mean age - 36,1±5,1, female – 11 (61,1%), AIDS – 15 (83,3%), liver cirrhosis – 6 (33,3%)) the 2nd group – 15 (mean age - 39,7±10,1 ys, female – 7(46,7%), AIDS – 14 (93,3%), liver cirrhosis – 1 (6,7%)). The percentage of cells in the inflammatory infiltrate expressing a particular marker was counted. «Statistica» version 10 was used, data are presented as Me and interquartile range (IQRs).

Results: In HIV / HCV coinfection, more pronounced CD8 + expression in IICL was observed in comparison with the 2nd group: 20,0 (20,0–30,0) vs. 20,0 (10,0–20,0) , respectively, p<005. Lower CXCR4+ expression in IICL was observed in the 1st group in compare with the 2nd one: 10,0 (10,0–20,0) vs. 10,0 (10,0–30,0), respectively, p<0,05. The ratio of expression of CCR5 to CXCR4 in the IICL in the 1st group was 1.0 (1.0-2.0) and was statistically higher in comparison with the median ratio of the same indices in the 2nd group - 1.0 (0, 5-1.0), p = 0.02.
Right correlation (Spearmen) was indicated among HIV/HCV coinfection and CD8+ expression in IICL: R=0,39, p<0,02. Negative correlation (Spearmen) was indicated among AIDS and CD68+ expression in ILCI: R=-0,43, p=0,01 in the 1st gpoup.
In group 1 patients, in the presence of liver cirrhosis (LC) compared with patients without LC more pronounced expression in IICL of HLA-DP, DQ, DR+ : 45 (30-50) vs. 15 (10-30), respectively, p<0,05 and CD56+: 35 (30-50) vs. 20 (20-30) had been established, respectively, p<0,05. Additionally a more pronounced HSV 1 and 2 types expression in the hepatocytes and Kupffer cells was established in HIV/HCV coinfected patients with LC in compare with those without LC.

Conclusions: Coinfection HIV/HCV is associated with more activated cellular immune response and more pronounced inflammatory reactions in the liver in compare with HIV-infected patients without HCV. Liver cirrhosis in HIV/HCV coinfection leads to more expressed activation of intracellular immunity which associated with emergence of opportunistic infections with intrahepatic expression.

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Hepatitis C reinfection after sustained virological response in HIV/HCV coinfected patients

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Background: On-going risk behaviour is a major risk that can lead to hepatitis C virus (HCV) reinfection following a successful treatment with direct acting antivirals (DAA). We aimed to assess the incidence of HCV reinfection in our tertiary center, and to describe possible associated factors in patients who have achieved sustained virological response 12 weeks after the end of treatment (SVR12).

Material and methods: Prospective analysis of HIV/HCV coinfected patients treated with DAA for hepatitis C with regimens of 12 to 24 weeks, between 2015 and 2017, with documented SVR12 and maintaining follow-up. We defined reinfection as a detectable HCV-RNA measurement post-SVR, using a quantitative assay. We excluded the cases of relapse (during the treatment or without documented SVR). Data was analysed using IBM SPSS Statistics 23.

Results: Of 400 coinfected patients treated for HCV during that period in our center (with a global SVR of 94,3%), we documented five reinfections, corresponding to a rate of 1,25%. Four were males and the mean age was 44 years (min 38; max 59). All the patients had previous history of intravenous drug use (IDU) and all of them resumed it after the treatment (only one with known sharing of injecting paraphernalia). The female patient had also risk for sexual transmission. Four patients had previous treated genotype 1a and one with genotype 1b. Four were under opioid substitution therapy with methadone. Regarding the HIV infection, all the patients were under antiretrovirals and had undetectable viral load. After HCV reinfection, the mean HCV-RNA at first positive assessment was 3.155.960 IU/ml (min 1400, máx 7.690.000). Mean time to documented reinfection was 10,6 months (min 5; max 17), with an average time between measurements of 5,5 months (min 2,70, max: 12). One patient became reinfected with a different genotype (3a), two reinfected with the same genotype (1a), and two others with still unknown genotype. The five patients are still waiting for second-approved treatment.

Conclusions: Although rare in our cohort, HCV reinfection is a concern mainly among individuals who have relapsed to IDU. Reinfection should be addressed and prevented when providing HCV care, probably with a more thoroughly follow-up after the successful first treatment, targeted for this high risk population.

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Decrease in HCV coinfection in individuals newly diagnosed with HIV-1 in Germany, January 2016 - December 2017

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Background: In light of the paradigm shift in the HCV therapy that is based on the availability of highly potent direct acting antivirals (DAA), we performed a surveillance of HCV coinfections among newly reported HIV diagnoses. The study is expected to support decisions concerning future prevention strategies, especially in the high-risk groups of men who have sex with men (MSM) and intravenous drug users (IVDs). In Germany, the HIV surveillance system is based on mandatory, anonymous reports of newly diagnosed HIV cases. A network of 82 participating laboratories from all over the country provides, along with the report form, serum residuals of newly diagnosed HIV cases spotted on a filter card as dried serum spots (DSS). By this sampling strategy approximately 60% of all reported newly diagnosed HIV infections are available with a specimen.

Material & Methods: DSS from newly diagnosed HIV infections in Germany with a date of diagnosis between January 2016 and December 2017 were analysed for the presence of anti-HCV antibodies and/or antigen by means of ELISA (Monolisa HCV Ag-Ab ULTRA V2, Bio-Rad). For further characterization into active infections (HCV RNA-positive) or resolved infections (HCV RNA-negative), nucleic acids were extracted (NucliSENS easyMAG, Biomerieux) from ELISA-reactive samples. The RNAs were analysed by an inhouse real-time RT-PCR targeting the 5'UTR of the HCV genome. PCR-negative samples were further analysed by an Immunoassay (recomLine HCV IgG, Mikrogen Diagnostik) to identify false positive samples in the initial screening ELISA and define the true proportion of HCV positive samples (HCV-RNA positive and/or HCV seropositive).

Results: In total, 2035 samples from 2016 and 1792 samples from 2017 reported until December 14th 2017 were available for the analysis. Between January 2016 and December 2017 the proportion of HCV positive samples in individuals newly diagnosed with HIV decreased significantly (p=0.002) from 7.2% (n=147/2035) to 5.0% (n=95/1792). Remarkably, the proportion of active infections decreased from 5.4% to 2.7%, while the proportion of resolved infections increased from 1.8% to 2.3% in this time period. In both years, MSM represent the main group in the study cohort (Ø 51.1%), followed by heterosexual individuals (Ø 25.9%), individuals of unknown risk group (Ø 28.4%) and IVDs (Ø 3.3%). The decreasing proportion of HCV positive individuals was apparent in all risk groups but IVDs, with the largest decline from 4.7% to 2.3% (-51%) in heterosexuals. In IVDs the proportion of HCV positive individuals remained high at 77.6% in 2016 and 76.9% in 2017 (-0.9%), respectively.

Conclusion: Between January 2016 and December 2017 the number of HCV coinfected newly HIV-diagnosed individuals decreased by 30% in Germany. We attribute this decline to successful treatments of HCV in the country. The decreasing proportion of HCV positive individuals could be observed in all risk groups but IVDs indicating that this important risk group does not benefit so far from the new and efficient HCV treatment options to a similar extent as the other groups at risk do. This necessitates more efforts for prevention, testing and treatment in this highly vulnerable part of the population.

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Hepatitis C diagnostic – barrier to effective Linkage to care within Georgian Hepatitis C elimination program

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Background: HIV and HCV remain significant public health challenges in Georgia. With an HCV prevalence of 7.7% and an estimated 150,000 persons living with chronic HCV infection, Georgia has one of the highest burdens of HCV infection in the world. Georgia began laying the groundwork necessary to meet these ambitious HCV elimination goals in 2015 by establishing HCV testing and treatment sites throughout the country and treating those found to be infected with curative DAAs made available free of charge by pharmaceutical company Gilead Sciences. The most affected risk groups for this infection are PWIDs. Prevalence of HCV in PWIDs varies between 50-92%. HCV screening was accessible in harm reduction program since 2006, but due to high cost the treatment was not affordable, especially for key populations. Georgian harm reduction network-GHRN was actively involved into a long advocacy process demanding free treatment for HCV patient PWIDs. It was interesting to estimate the involvement of PWIDs from harm reduction program in elimination program. Within elimination program DAAs are free of charge, but patients have to pay part of diagnostics out of pocket.

Methods: In order to evaluate the involvement of PWIDs in the Hepatitis C elimination Program, GHRN requested the data from 14 NSP drop-in centers that are located in 11 major cities. The data was generated from harm reduction program database and recordings of outreach workers and VCT counselors that were supporting PWID in linkage to care. The data were received from the following regions: Tbilisi, Guria, Imereti, Adjara, Kakheti, Kvemo-Kartli and Shida Kartli.

Results: Totally 25,328 HCV testing were performed in 2017, out of them 7,526 were HCV positive. All HCV positive PWIDs were referred to HCV treatment sites by 14 harm reduction sites.
In Tbilisi, out of 2,425 of screened positive HCV cases Only 53% were involved in HepC elimination program.

There were defined the following reasons for this: a) lack of money required for co-payment; b) low motivation of drug users to be treated.
In Imereti region out of 1,438 of screened positive cases there were involved only 34% in treatment, Samegrelo announced 985 positive cases, involvement percentage were - 67% - the reasons of refusal were the similar plus restricted geographical access to the treatment clinics and myths about negative effects of the drugs. There are quite a number of reasons of refusal to treat in Adjara region: Stigma and self-stigma and discrimination from Medical personnel are one of the main reasons of low involvement (35-40%).

Conclusions: The study results demonstrate that free medication is not enough for involvement in the treatment program, free diagnostic is necessary for effective linkage to care especially for high risk groups. Besides, capacities of harm reduction programs should more effectively be used for linkage to treatment services. Proper risk counseling and disease awareness activities are inevitably important to increase involvement of PWIDs in Hep C elimination program.

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A new genotype of hepatitis Delta virus identified in Cameroonian patients

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Background: Hepatitis Delta virus (HDV) infection is hyperendemic in Central Africa and the different genotypes of this virus have a characteristic of dissimilar geographic distribution. However, little is known about HDV genotypes distribution in this area. The present study was taken to determine the different HDV genotypes prevailing in Cameroonian patients.

Methods: The study was conducted in the Virology Unit of the Centre Pasteur of Cameroon. Blood samples (n=247) of patient with confirmed HDV infection were analysed. Circulating HDV genotypes were determined using a semi-nested amplification of partial R0 gene and phylogenetic analysis of the different sequences. In order to determine the association between the different genotypes, the viral replication and the severity of liver disease, viral load and ALT level of all patients were obtained from the data base.

Results: Phylogenetic analysis of 84 nucleotide sequences of the Hepatitis Delta Antigen (HDAg) R0 region obtained in this study, showed considerable diversity among the local strains with 84.5% of genotype I, 1.2% of genotype 5, 2.4% of genotype 6, 10.7% of genotype 7 and 1.2% of genotype 8. Interestingly, our study reports for the first time the circulation of HDV-8 in Cameroon, but also the co-circulation of all the others so-called "African" genotypes (HDV-5, 6 and 7). Regarding the association between genotypes and the severety of liver disease, the present study reports that patients infected by genotype HDV-7 had abnormal ALT levels.

Conclusion: This study showed for the first time the circulation of HDV-8 in Cameroon. In addition, HDV genotype 5, 6 and 7 knowned as ''African genotypes'' and HDV genotype 1 were also identify. Our results also show that patients infected with HDV genotype 7 are in high risk to develop severe liver disease. Further studies are needed in order to provide more information about the different HDV genotypes and the severety of the infection.

Keywords: Hepatitis D, Genotype, hepatitis B, Alanine transferase, Viral load, Cameroon.

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In African livers also, steatosis is a frequent background for cancer.

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Background: Steatohepatitis is increasingly recognized as one of the most common etiology for hepatocellular carcinoma (HCC) in developed countries. The incidence of this tumor is also high in the sub-Saharan Africa were it represents the leading cause of cancer related death. However, data regarding the accumulation of triglycerides within hepatocytes and liver remains scarce in the region. Accordingly, this study aims to determine the morphological distribution of HCC and to assess its connections with risk factors and non-tumor tissue.

Materials and Methods: A retrospective study covering ten years was conducted in the Pathology Unit of the Centre Pasteur of Cameroon. Data available from 360 archival formalin-fixed and paraffin embedded liver biopsy specimens were collected, sectioned, re-stained and re-evaluated for morphology. The underlying chronic liver was also reassessed for steatosis and evidence of steatohepatitis. Categorical data were compared with a Fisher exact test whereas x2 test was used for frequency distribution. A difference was defined as significant at p≤0.05.

Results: Malignancies were recovered from 24.7% (89/360) of liver biopsies. Primary liver tumors consisted in 80 cases of HCC and one hepatoblastoma. The risk factors analysis shows that, chronic HBV infection was found in 52.5% (42/80) of HCC patients whereas 36.2% (29/80) of HCC cases were associated with HCV infection. The etiology was unknown for 9 patients (11.5%) and, of course for the child diagnosed with hepatoblastoma. The distribution of the morphological variants of HCC shows that the well-differentiated microtrabecular (n=34/80, 42.6%) pattern was dominant over less differentiated macrotrabecular subtype (n=11/80, 13.7%). Other sub-types diagnosed included scirrhous forms (11.2%) and acinar/pseudoglandular (32.5%) subtypes. Remarkably, liver steatosis was present in 60.0% (48/80) of patients with HCC, most of them infected with hepatitis C virus (75.8%). Well-differentiated trabecular tumors were significantly associated with important fibrotic and necro-inflammatory activities in livers (P=0.008) whereas acinar pattern was significantly frequent on fatty livers (P=0.02).

Conclusions: The present study indicates that in Middle Africa the morphology of HCC correlates with changes affecting non-tumor liver tissue. Notably, acinar pattern is more often associated with lipid metabolism defects. Our results indicate that fatty liver changes represent the underlying background of HCC in Sub Saharan Africa as in more developed regions of the world.

Keywords: Hepatocellular carcinoma, steatohepatitis, trabecular, acinar, hepatitis C, steatotis, fatty liver, Cameroon.

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Prevalence of HCV infection in drug users and other groups at risk of social exclusion: HepCare Europe

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Background: Many patients infected with HCV are unaware of their situation or have lost their follow-up, especially among groups of people in situations of fragility or at risk of social exclusion, such as drug users (DU). The HepCare Europe project aims to generate a new model of care for hepatitis C that facilitates access to diagnosis and treatment of HCV infection of disadvantaged groups. The objective of the HepCheck subproject is to evaluate the prevalence of HCV infection in these groups.

Methods: A hospital-based health team moved to addiction treatment centers, non-governmental organizations and primary care centers to collect epidemiological questionnaires. In those centers, blood was drawn or saliva was taken to detect markers of HCV infection. Patients with detectable HCV RNA were provided with direct access to specialized care.

Results: Since January 2017, 695 individuals were invited to participate, 29 (4%) refused to participate, 228 (32%) failed their appointments and 438 (63%) persons consented to participate. Of the 438 individuals screened, 337 (77%) were unaware of their HCV status and not linked to care. Out of those 337 participants, 151 (45%) presented previous positive anti-HCV antibodies with unknown HCV viremia. Seventy-six (50%) of those had detectable HCV RNA. Among 189/337 (55%) individuals with unknown serostatus, with negative HCV serology >1 year before or with negative anti-HCV <1 year before engaged in recent habits of risk, 4 (2%) were anti-HCV positive. Both were HCV RNA positive. Thus, out of the 337 patients not linked to care who were screened, 80 (24%) showed active HCV infection.

Conclusions: In a population mainly constituted by DU, one fourth of the subjects who did not know their HCV status, and were not linked to care, had active HCV infection. The results of this study can help to guide the screening policy towards groups with a higher probability of active infection.

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An update of hepatitis C prevalence rates in homeless adults after hepatitis C treatment paradigm change: a systematic review and meta-analysis

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Background: An estimated 100 million people are homeless around the world. Concurrent vulnerabilities, such as psychiatric diseases, addictions with unsafe injection practices increase blood-borne infections risks, including HCV in homeless individuals. A 2012 Lancet Infectious Diseases paper reported HCV prevalence in homeless ranging from 3•9% to 36•2%, but we know very little about HCV treatment in homeless, aside from the fact that treatment is rarely if at all provided or considered. Old treatment regimens from the "interferon era" had many psychiatric side effects, including increased suicide and major depression rates and were contraindicated in patients, who had pre-existing or secondary psychiatric diseases, addictions, and were unstable. Meanwhile, treatment paradigm has changed in HCV management recently. Current HCV treatment options are not contraindicated in people with psychiatric conditions anymore and can help successfully achieve HCV cure. Additionally, new treatment options are shorter in duration, all-oral instead of injections with easier to adhere regimens, and are recommended by current guidelines in unstable individuals as well. This study objective is to update previous study findings, and examine HCV treatment prevalence in homeless adults.

Methods: On February 2016 we searched PubMed, EMBASE, and Cumulative Index to Nursing and Allied Health Literature databases for "homeless* and (hepatitis C or HCV)" for studies reporting HCV prevalence in homeless adults published between 31 January 2012 and 15 February 2016. Meta-analysis was conducted following the PRISMA Checklist. Data was tabulated in Comprehensive Meta-Analysis.

Findings: Fifteen epidemiological studies yielded. The omnibus prevalence rate for HCV in homeless remains unchanged since 2012, (28%; 95% CI: 23-34; N=15). Only three studies reported HCV treatment investigation, but the data quality could not allow a meta-analysis.

Interpretation: Despite a high HCV prevalence among homeless, HCV treatment prevalence information is limited; some studies mention that treatment is not practically provided. This meta-analysis data can help to estimate the frequency of HCV infection, which can help to plan HCV management services for homeless population in a better way. Together with the recent advancements, paradigm changes in HCV treatment the data from this review can also contribute to the global HCV elimination goal.

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Characterization of patients treated with hepatitis C - is HIV a burden? Analysis of an individual experience

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Introduction: Directly-acting agents (DAA) against HCV have improved the sustained virologic response (SVR) in both HCV and HIV/HCV co-infected patients, due to high efficacy and good tolerability of those drugs. The presence of HIV is no more a risk factor for failure.

Aim: Characterization of both HCV and HIV/HCV co-infected patients according to viral and host factors, as well as social features, such as opioid substitution therapy (OST) or incarceration.

Methods: Retrospective analysis of patients who initiated DAA in an individual appointment in two different populations HCV and HIV/HCV individuals, regarding virological and social aspects, response to therapy and outcome, between March 2015 and February 2018.

Results: A total of 180 chronic hepatitis C patients had initiated a course of all oral DAA therapy: mean age of 48 years old, 79,9 % male, 63.8% naïve and with the following genotype distribution: GT1-68,3%, GT3-18,3%, GT4-12% and GT2-1,1%. In case of treatment experienced patients, genotype 1 was the predominant (71%). Advanced liver disease (F3/F4) was present in 42,5% (F4-22,4%). HIV/HCV coinfected patients represented 42,5% of the total, prisoners 9,7% and those under OST-22,9%.
Sofosbuvir(SOF)/Ledipasvir+Ribavirina (R) was prescribed in 75,8%, followed by SOF+Daclatasvir+R (8,6%), SOF+R (7,4%), Grazoprevir/Elbasvir (3,4%), Ombitasvir/Paritaprevir/r (2,8%) and SOF/Velpatasvir (1,7%).
There is available data for SVR12 in 156 patients: 8 (5,1%) patients relapsed (GT1-5, GT2-1 and GT3-2) and other 6 died (3) or were lost for follow-up (3). Three patients had hepatocellular carcinoma (HIV-). In this sample SVR12 was 91% and 94,8% in an ITT or PP analysis. All cases of failure occurred in HCV mono-infected patients, but incarceration (16,2% vs 5%) and use of OST (28,5% vs 19%) was more common in HIV/HCV individuals. There were 6 cases of reinfection (3,4%), all in HIV infected patients (8,1%=6/74). Six patients were retreated, all with SOF as backbone (plus DCV+R-1 or GRZ/EBR-2 or 3D-1 or VEL-1), and 2 had SVR, 1 failure and 3 on treatment.

Conclusions: Although the SVR in this sample was 94,8%, in HIV/HCV co-infected patients it was 100%. The presence of HIV is no longer a burden on the success on HCV therapy, but these individuals have more social problems, such as incarceration, and the rate of reinfection is much higher than HIV negative individuals.

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Normal genotype Gln11Gln of the TLR7 influence rapid progression of liver fibrosis in women

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Background: The HIV/HCV coinfection contributes to the progression of liver damage and increases the risk of the development of antiretroviral therapy side effects. Despite the availability of effective treatment, the HCV remains to be one of the major, except the opportunistic diseases, causes of mortality among HIV-infected individuals. Correlation between the processes of immunopathogenesis and development of the liver fibrosis, metabolic disorders in HIV/CHC-co-infected patients have been actively studied with the emphasis on the inherent immunity, namely, the TLR genes The TLR polymorphism is crucial in the development of the immune response.

Methods: We analyzed data from a retrospective cohort of 104 women, 110 with HCV and 81 with HIV/HCV who were observed in HIV outpatient clinic in Poltava region of Ukraine. Gln11Leu polymorphic area of the TLR7 gene was genetically
typed by the real-time PCR using specific oligonucleotide primers. We analyzed the predictors of rapid progression of liver fibrosis using Cox proportional hazards regression model. Outcome measures included time to diagnosis of F≥2. Time of observation was considered starting from the first positive HCV test. HIV-infection was considered a primary predictor with control of age, alcohol abuse, drug use, overweight, biochemical tests and genotype of TLR7.

Results: Genotype 1 HCV has been identified in 44.4% HIV/HCV coinfected women and 63.6% HCV-monoinfected. Stage fibrosis F≥2 has been observed in 66.7% coinfected and 41,8 HCV-infected (p=0.032) women, normal Gln11Gln genotype of the TLR7 gene in 44.4% and 69.1% (p=0.032), overweight - in 7.7% and 38.2% (p=0,001) respectively.
Hazards of rapid fibrosis increased with HIV-infection (HR=1.88 95%CI 1.12-2.11), overweight (HR=0.56 95%CI 0.29-0.95), normal Gln11Gln genotype of the TLR7 gene (HR=0.36 95%CI 0.18-0.69) and elevated GGTP level (HR=1.22 95%CI 1.019-1.84).

Conclusion: Predictors of rapid progression liver fibrosis in HCV-infected women are found HIV-infection, overweight, elevated GGTP level and normal Gln11Gln genotype of the TLR7 gene.

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Chronic hepatitis C genotype 4 infection in HCV/HIV patients with direct acting antivirals

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Background: Hepatitis C virus (HCV) genotype 4 (G4) infection represents 12-15% of global HCV infections and is less prevalent in Europe the genotype 1 and 3. It is more frequent in Northern Africa and Middle East.

Aim: To evaluate the evolution of G4 HCV/HIV infected patients during HCV treatment with DAAs

Methods: Prospective study of genotype 4 HCV/HIV coinfected patients treated for chronic hepatitis C with direct acting antivirals (DAAs) treated in our department from 2015 to 2017. SPSS v 23 was used for statistical analysis.

Results: Of the 400 HCV/HIV co-infected patients treated in our department, 13% (n=52) were genotype 4 infected and were included in our study.
Most patients were male (84,6%) and the mean age was 46 years-old (minimum 32, maximum 60). The most frequent acquisition route of HCV virus was intravenous drug use (92,3%). In our sample, 32,7% of patients were treatment experienced.
Regarding fibrosis, most patients had non-severe fibrosis (F0-F1: 42,3%; F2: 19,2%), 15,4% had stage 3 fibrosis and 23.1% were cirrhotic. Of the cirrhotic patients, 50% had more than 25KPa in hepatic elastography measurement, mean MELD score was 8 (minimum 6, maximum 14) and 25% had Child-Pugh score B; one patient had Child-Pugh score C.
Respecting HIV infection, all patients were receiving antiretroviral therapy and all patients had HIV RNA < 50 copies/mL and the mean CD4 cell count was 708/mm3. The most frequent therapeutic option was sofosbuvir/ledipasvir (88,5%), followed by ombitasvir/paratiprevir/ritonavir (9,6%). There were no significant adverse events during treatment.
Global SVR12 was 92,3%. There was no difference in SVR between non-cirrhotic (92,5%) vs cirrhotic patients (91,7%); p: 0,897. Three patients were lost to follow-up. One patient did not respond to the first treatment: a 39 year-old male, with F4 fibrosis, treated with sofosbuvir/ledipasvir + ribavirin for 24 weeks.

Discussion: HCV genotype 4 infection is less frequent than other genotypes and comprises about 13% of all patients treated in our department. Treatment was well tolerated in our patients, despite a significant proportion of patients with advanced fibrosis (38,5%). Global SVR12 was high (92,3%) and there were no differences between cirrhotic and non-cirrhotic patients.

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Novel ImmTAV (TM) molecules for the treatment of HBV and HIV

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Immunotherapeutic strategies function to harness the body's own immune system to eradicate foreign cells/pathogens, such as cancer cells, bacteria or viruses. Critical to this process is the T cell, capable of directing potent and antigen-specific immune responses. T cell antigen recognition is mediated by the T cell receptor (TCR), interacting with short peptides derived from intracellularly processed proteins that are presented on the cell surface by human leukocyte antigens (HLA), offering distinct advantages over antibody-based therapies that only recognise secreted or cell surface proteins. However, naturally occurring T cell responses are often insufficient, with binding affinities in the µM to nM range.

At Immunocore, we developed Immune mobilising monoclonal TCRs Against Cancer (ImmTACTM); a new class of soluble bi-specific molecules comprising affinity-enhanced monoclonal T cell receptors (mTCRs) (pM affinity) fused to an anti-CD3 scFv, which redirect effector T cells. Our most advanced ImmTAC molecule to date, IMCgp100, has demonstrated encouraging anti-tumour activity against uveal melanoma and is currently in pivotal trials.

Building on the potential of the ImmTAC platform, at Immunocore we are applying our TCR technology outside of oncology to address unmet needs in infectious diseases with the development of Immune mobilising monoclonal TCRs against viruses (ImmTAV) molecules. Among our initial target indications are chronic hepatitis B virus (HBV) and human immunodeficiency virus (HIV). The global disease burden of HBV and HIV is substantial, with 240- 350 million people chronically infected with HBV and 36.7 million people living with HIV.

While anti-retroviral therapy has proved successful in suppressing disease burden in HIV-infected individuals, the immune system is unable to eradicate the infected cell population. Furthermore, in chronic HBV carriers, defective T cell responses can lead to the development of liver cirrhosis and/or hepatocellular carcinoma in 10-30% of individuals.

With up to $40 million investment from The Bill & Melinda Gates foundation, the ImmTAV platform aims to reduce treatment timelines, improve patient outcomes and "functionally cure" infections for which no cure exists today. Here, using a range of biophysical and cellular assays, we demonstrate the ImmTAV platform; from profiling HBV/HIV-antigens, isolating antigen-specific T cell clones, engineering ImmTAV molecules, and affinity maturation of ImmTAV molecules by directed evolution using phage display

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Epidemiological characteristics and factors contributing to the development of liver fibrosis in HIV/HCV – coinfected patients in Ukraine

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Background: Ukraine has faced with rapid growth of HIV/HCV epidemics. These diseases are real concern not only for Ukraine, but for many developed countries. Ukraine's distribution epidemic is seen to be fueled by people who injected drugs (PWID) with limited access to the antiviral therapy of HCV.

Materials & Methods: The aim of the study was to analyze the epidemiological characteristics of a cohort of HIV/HCV-coinfected patients in Poltava region, which were monitored from 2003 to 2014 year. The study involved 1537 patients, including 848 – HIV/HCV-coinfected and 689 HIV-monoinected individuals. We examined the contributing factors of accelerated fibrosis progression in HIV/HCV-coinfected patients. Cox proportional hazards regression model was used to outcome measure included time from the first positive HCV test to diagnosis advanced liver fibrosis (F3-F4).

Results: It was found out that the proportion of HIV/HCV-coinfected patients in the cohort during the observation period was maintained at 56.1% - 65.9%. In the group of HIV/HCV-coinfected people, a significant prevalence of males (63.4%, p = 0.000), age group 30-39 years (54.0%, p = 0.000) with the parenteral route of transmission (77.2%, p = 0.000) was recorded. Correlation analysis has proven the presence of genotype Gln11Gln TLR7 gene (HR= 1.6; 95% CI [1.1-3.7]) is one of the factors contributing to the development of liver fibrosis along with other factors as the lower level of CD4 (HR= 1.5; 95% CI [1.2-1.9]), presence of TB (HR= 1.9; 95% CI [1.4-5.3]), age over 40 years (HR= 1.9; 95% CI [1.1-2.1]), male sex (HR= 2.4; 95% CI [1.2-4.5]).

Conclusions: The study revealed a significant prevalence of male-patients of reproductive and able-bodied age with the parenteral route of transmission in the group of HIV/HCV-coinfected people. A higher risk of accelerated liver fibrosis progression is seen in HIV/HCV coinfected patients with older age, male sex, lower level of CD4, presence of TB and genotype Gln11Gln TLR7 gene.

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Evaluation of lipid levels and cardiovascular risk in HIV-infected patients 24 weeks after being switched from a tenofovir disoproxil fumarate to a tenoforvir alafenamide containing-regimen in a clinic in Puerto Rico

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Background: Tenofovir alafenamide(TAF), has demonstrated to have less risk for nephrotoxicity and less impact in bone mass than tenofovir disoproxil fumarate(TDF) which has led to the switch of TDF to TAF-containing regimens. Studies have demonstrated an increased in total cholesterol(TC), low-density lipoprotein(LDL), high-density lipoprotein(HDL), and triglyceride(TG) levels in those patients on TAF. There are no studies published regarding lipid elevations of patients after being switched from TDF to TAF in Puerto Rico. Therefore, we want to evaluate the change in lipid levels in HIV+ patients after being switched from a TDF to a TAF-containing regimen under care at a clinic located in Puerto Rico.

Methods: This is a retrospective, single-center study were patients with HIV switched from a TDF to a TAF-containing regimen between January 2016 and January 2017 were included. Patients were excluded if they were ARV-naïve, switched from a non-TDF containing regimen, and co-infected with Hepatitis B. Total cholesterol, LDL, HDL, TG, and TC/HDL were compared before and 24 weeks after the switch.

Results: Sixty patients met the inclusion criteria. An increase in cholesterol levels was observed. Mean changes in cholesterol parameters were as follow: TC 16.67mg/dL, LDL 9.99mg/dL, HDL 4.49mg/dL, TG 23.25mg/dL and TC/HDL ratio -0.14. Mean increases in TC, LDL, TG, and HDL in those patients on a RTV-boosted PI were higher than those with COBI-boosted PI (TC: 22.24 vs. 19.77, LDL 13.46 vs 11.28, HDL 7.99 vs 3.42, TG 17.86 vs. 10.45). Patients with dyslipidemia experienced higher mean increases in TC, LDL, HDL, TG than those patients without dyslipidemia (TC: 24.36 vs. 5.13, LDL: 17.72 vs -1.59, HDL 5.69 vs. 2.70, TG 31.23 vs. 11.27).

Conclusion: Mean increases in TC, LDL, TG and HDL were observed just 24 weeks after patients were switched from a TDF to a TAF-containing regimen. More increase is already seen on prelaminar 48 weeks data. Cardiovascular risk increased.

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Chronic hepatitis C treatment in co-infected HCV/HIV patients failure – why it happens?

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Background: With direct acting antivirals (DAAs), the treatment of chronic hepatitis C (HCV) has high success rates. However, there is a small percentage of patients that does not obtain SVR 12 (sustained virulogic response). The baseline characteristics that may predispose to treatment failure with DAAs are unknown.

Aim: To compare the baseline characteristics of HCV/HIV co-infected patients who failed HCV treatment with DAAs to those that obtained SVR12 in real life setting.

Methods: Prospective study of HCV/HIV co-infected patients treated with DAAs for 12 to 24 weeks. We compared the baseline characteristics of responders and non-responders using SPSS version 22.0.

Results: We include 400 patients treated with DAAs, of which 377 had SVR12 (94,3%). In this group, mean age was 46 years, most of the them were male (87,3%) and intravenous drug users (95,5%). Genotype 1 was the most frequent (74,5%). All patients received antiretroviral therapy (ART), mean CD4+ cell count was 647/mm3 and 97,7% were virologically suppressed.
We had 23 patients that failed the treatment: seven patients relapsed, eight patients died e eight were lost in follow up.
Regarding the seven patients that relapsed, the mean age was 44 years, all were male and four (57%) were treatment experienced. The mean RNA HCV was 6.679.857 (UI/mL) and the mean CD4 cell count 681 CD4/mm3. Genotype 1 was the most frequent (42,9%), followed by genotype 2 (n=2; 28,6%) and two patients with genotype 4 (n=2; 28,6%).
Comparing the baseline characteristics of the two groups, we found no difference in baseline body mass index, platelets, INR, AST, ALT, albumin count or HCV RNA, CD4 cell count or fibrosis.

CONCLUSION: In our sample, only a small proportion of patients failed HCV treatment (1,75%) and we don´t found any baseline differences in the seven patients that failed.

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Sero-prevalence of hepatitis B and C at commencement of antiretroviral therapy: Assessing the treatment outcomes in HIV infected patients in Abuja Nigeria

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Background: Nigeria has the second highest HIV burden globally with a HIV prevalence of 3.0%. Transmission of Hepatitis B and C is similar to that of HIV therefore co-infection with HIV is not unusual. Abuja in the north central region of Nigeria has a prevalence of 5.8% following the recently released sentinel survey in Nigeria. This study aims to explore the prevalence of hepatitis B and C in our HIV population and the impact of HIV on virological treatment outcomes.

Methods: We hypothesised that virological response to ART could be worse in HIV/HCV and HIV/HBV co-infected patients. We conducted a retrospective desk review utilizing clinical and laboratory data (HBsAg, anti- HCVab and HIV-1 VL) of n=1489 patients from April 2016 to January 2018. Primary end point was VL< 1000 copies/ml after 6 months of ART. Baseline sociodemographic data and ART regimens was collected. Data was analysed using descriptive, chi square and binary logistic regression on the SPSS version 20.0

Results: The mean age of the participants is 38.4 years. Of the 1489 HIV infected patients, 29(1.9%) were HBV/HCV co-infected. 1274(85.6%) patients had viral suppression (481 males 37.74%, 793 females 62.24%). 107 (21%) out of the 510 clients with liver function test (AST and ALT) had raised transaminases, 85(79.4%) of these results had viral suppression while 22(20.6%) had viral load results greater than 1000 copies/ml.

Conclusion: Co-infection of Hepatitis B/C and HIV, and the consequences on progression of severe liver diseases is a global public health issue. Better treatment outcomes in female with Hepatitis B and C co-infection in HIV infected population, however, data on HCV and HBV DNA would be needed to buttress these findings. Insights into the pathogenesis and immune dysfunction are needed to reduce morbidity and mortality associated with Hepatitis B/C virus co-infection.

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First experience with elbasvir/grazoprevir combination in real-life practice in the Madrid-core cohort

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Introduction: Curing Hepatitis C virus (HCV) infection in particular populations of HCV/HIV-coinfected is a medical challenge. The new fixed-dose combination of the highly potent second wave first generation NS5A inhibitor elbasvir (50 mg) and the second generation protease inhibitor grazoprevir (100 mg) is contained in the drug Zepatier. The drug has shown excellent results in clinical trials but the real-life data are still insufficient.

Objectives: To evaluate baseline characteristics and treatment outcomes of coinfected patients (HIV/HCV) treated with the direct-acting antiviral (DAA) Elbasvir/Grazoprevir (EBR/GZR) in the Madrid-CoRe cohort.

Methods: Transversal analysis of coinfected HIV/HCV patients treated with EBR/GZR included in the Madrid-Core cohort (prospective registry of HIV/HCV-coinfected patients treated with DAA based therapy in hospitals from the Autonomous Region of Madrid since November 2014). We collected baseline characteristics: sex, age at the beginning of treatment, risk group (RG): injected drug users (IDU), men who had sex with men (MSM), heterosexual contact (HXC), CD4 + T cell count and HIV virological suppression; liver disease characteristics: HCV genotype and HCV viral load (VL); HBV co-infection, fibrosis grade (by Fibroscan®) , CHILD score, hepatocellular carcinoma (HCC) history, liver transplantation criteria, extrahepatic manifestations, and HCV pretreatment rate. Sustained viral response rate 12 weeks (SVR12) after end of treatment (EOT) was registered. In order to calculate SVR12 rates, patients who were in follow up and had not reached 12th week after EOT were excluded. Serious adverse events were registered. Quantitative variables are expressed by median (med) and interquartile range (RIC), nominal variables by value and percentage. Statistics by SPSS 22.0.

Results: 89 patients were analysed. 74 (89%) were men, median age of 51 years (RIC 7). RG: IDU 57 (64%), MSM 21 (23.6%), HXC 2 (2.2%). CD4 + T cell med: 511 cel/mm3 (RIC 393), CD4+ nadir <200 cel/mm3: 35 (39,3%), nadir CD4 200-499 cel/mm3: 26 (29,2%); nadir >500 CD4: 11 (12,3%); no data about CD4 nadir in 17. HIV VL <50 cop/ml in 74/78 (94,9%). HCV genotype: G1a in 31 (35%), G1b in 20 (23%), 1 G1ns and G4 in 37 (42%). HCV VL med (log10) was 6 (RIC 0.96). 6 (7%) were coinfected with HBV. Liver stiffness with Fibroscan®: 54 (60%) F0-1, F2 in 13 (14,6%), F3 8 (9,3%), F4 in 14 (15,7%). A CHILD score in 100%. 0 HCC, 0 included in liver transplant list, no severe extrahepatic manifestations registered. 69 (77,5%) were naïve. Length of treatment was: 12 weeks in 70 (78,6%) and 16 weeks in 19 (21,4%); ribavirin use was required in 14 (15,7%). 72 (80,1%) were considered for RVS12: achieved in 67 (93%); 2 treatment interruptions and 3 lost of follow up. No SAEs reported.

Discussion: Overall, HCV/HIV coinfected patients treated with EBR/GZR have an acceptable liver involvement (despite almost 25% had advanced "F3-F4" fibrosis, being all of them with CHILD A). SVR12 rates for EBR/GZR in our "real world" cohort reaches 93%, consistently with previous published clinical trials. Most of them were treated with a 12-week regimen. All the patients who completed EBR/GZR regimen reached HCV eradication.

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New diagnostic tools for management of liver fibrosis

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Background: Liver fibrosis is a major cause of morbidity worldwide due to chronic viral hepatitis and fatty liver disease. Pathways of fibrogenesis are increasingly clarified. Researchers focus on translating the new advances discovered above fibrosis pathogeny into the development of antifibrotic therapies.

Aim: We aimed to identify the evolution of fibrosis using new non-invasive procedures as FibroScan in patients diagnosed with liver chronic diseases of different causes, treated with specific therapies.

Material and method: We retrospectively studied data collected from the files of 50 patients during a period of two years (feb 2016 – jan 2018) in Gastroenterology Clinic, St Apostle Andrew Emergency Hospital of Constanta County. The device used to stage the liver fibrosis was the FibroScan, which uses ultrasounds to measure the liver stiffness.

Results: The distribution of patients diagnosed with chronic liver diseases according to main etiologies revealed the following: viral hepatitis – 24 patients (48%), NASH – 7 patients (14%), alcohol intake – 17 patients (34%) and autoimmunity – 2 patients (4%). Patients were evaluated for fibrosis stage at the time of diagnosis and 2 years from the onset of treatment. After 2 years of evolution in patients with viral infections, with or without antiviral treatments, the examination of liver fibrosis showed the following results: F0/1: 4 pts with viral infections; F2: 11 patients with viral infection, from whom 3 with evolution of fibrosis due to the absence of treatment and 1 with regression from F3, due to antiviral treatment; F3: 4 patients with viral infection, from whom 2 with stationary fibrosis, despite the treatment, 1 with regression from F4 and 1 with evolution from F2, due to the lack of adequate treatment; F4: 5 patients with stationary liver fibrosis, no-matter the treatment. In patients with NASH with or without treatments correlated with etiology, the examination of liver fibrosis showed the following results: F0/1: 3 pts with NASH, from whom 2 pts with regression from F2; F2: 1 patients with viral infection, with regression from F3, due to diet and physical activity; F3: 2 patients with NASH, from whom 2 with stationary fibrosis, despite the treatment; F4: 1 patients with stationary liver fibrosis, no-matter the hypolipemiant treatment or diet. In patients with alcoholic hepatitis, the examination of liver fibrosis showed the following results: F0/1: 6 pts with alcoholic hepatitis, from whom 1 pts with regression from F2; F2: 5 patients with alcoholic hepatitis, from whom 2 pts with regression from F3 and the rest stationary; F3: 5 patients with alcoholic hepatitis, from whom 42 with stationary fibrosis and 1 with regression from F4; F4: 1 patient with stationary liver fibrosis, no-matter the alcohol abstinence.

Conclusions: Noninvasive testing, as FibroScan, is becoming increasingly important in fibrosis staging. The etiologic treatment proved benefits on liver fibrosis, especially in those with alcohol abuse or viral hepatitis. The preventive treatment of fibrosis progression should be considered an important step in chronic liver diseases management.

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Prevalence of anti- HDV antibody among patients with Hepatitis B Viral infection in Cameroon: 2012- 2017

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Background: Hepatitis Delta caused by the hepatitis D virus (HDV) is a satellite virus to hepatitis B virus (HBV) that uses the latter's envelope for survival. In Cameroon, data on the prevalence of HDV infection are patchy and very heterogeneous according to the authors, the population studied and the study period. The most recent study, based on samples from the 2011 Demographic Health Survey (DHS), reported a national prevalence of anti-HDV (anti-HDV) antibodies of 13.8% (95% CI = 12.2-15.6%). The objective of our study was therefore to determine the current prevalence of HDV infection in Cameroon through the analysis of samples obtained from 2012 to 2017.

Materials and methods: We conducted a cross-sectional and retrospective study during the period from January 2012 to September 2017. The HDV serology was performed for HBsAg positive patients received at Centre Pasteur of Cameroon between 2012 and 2017 using HDV Ab (Dia.pro Diagnostic Bioprobes.S. Socio-demographic data were also obtained. Logistic regression was used to evaluate risk factors and the T-test used for the comparison of means. The significance level was set at $p < 0.05$ and the confidence interval was set as 95%.

Results: A total of 426 HBsAg positive patients were enrolled. Of these, 183 (43%) were female with a mean age was 28.69 ± 12.1 [range: 6 – 83 years]. Overall, the prevalence of anti-HDV antibody from 2012 to 2017 was 16.48% (95% CI: 11.76-18.77%) ranging from 22.9% in 2012 to 16.4% in 2017 with the minimum in 2014 (9.2 %) and the maximum in 2013 (23.5%). People over 40 years or living in the regions of East and South Cameroon, with the HDV prevalence of 66.7%, 50% , and 40% respectively, had significantly high anti- HDV antibodies ($p \le 0.05$) and were at risk of HDV (OR > 1).

Conclusion: Cameroon remains an endemic country to HDV infection with an average prevalence of 16.48% from 2012 to 2017. Aging and areas in the dense forest may be risk factors for Hepatitis D.

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Influence of IL28B gene polymorphisms on the spontaneous clearance of HCV in HIV-infected patients in Ukraine

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Background: One of the options for the natural course of HCV infection is spontaneous clearance (SC) of the hepatitis C virus in some patients. Recent studies have shown that a new genetically determined prognostic factor - a variant of the single-nucleotide (spot) polymorphisms (SNP) of the human gene interleukin 28B (IL28B) encoding the interferon of lambda type 3 (IFN λ 3) influence SC of HCV. Impact of polymorphisms in IL28 B gene on HCV SC in HIV-infected patients in Ukraine seems to be unclear.

Materials & Methods: The retrospective observational study included 70 HCV/HIV- coinfected adult patients aged 22-66 years on first-line regimen ART > 6 months who were assessed for the presence of SNP in IL28 B gene. Patients were divided into two groups. Group 1 included patients with SC of HCV after infection (anti-HCV IgG core positive and one of anti-NS3, anti-NS4, anti-NS5 with negative RNA HCV at intervals of 6 months). Group 2 included patients with chronic hepatitis C (anti-HCV IgG core and one of anti-NS3, anti-NS4, anti-NS5 with positive RNA HCV). Thus, the first group included 18, the second - 52 persons. IL28 B genotyping was performed by real-time polymerase chain reaction. To estimate the prognosis of HCV-infection we used two basic SNP: rs12979860 with possible variants of genotypes - CC, CT, TT and rs8099917 with possible genotypes - TT, TG, GG. Statistical analyses were carried out using the SPSS/PC+ statistical package (version 17; SPSS, Chicago, IL, USA).

Results: Our study has shown there is reliable higher prevalence of CC genotype of IL28 gene (rs12979860) in patients with spontaneous clearance of HCV compared with patients having chronic hepatitis C.

Among the patients of the first group genotype of CC was detected in 14 cases (77.8%), the genotype of CT was found in 3 patients (16.7%) and the genotype TT - in 1 patient (5.6%). The patients of second groups showed genotype CC in 23 cases (44.2%), the genotype CT was found in 21 cases (40.4%) and the TT genotype was found in 8 patients (15.4%) (p=0,049).

Assessment of the IL28B gene on the polymorphism variant rs8099917 determined that for patients with SC of HCV TT genotype was found in 16 (88.9%), the genotype TG was found in 2 patients (11.1%) and the genotype GG in our study was not found. For patients with chronic hepatitis C, when examining the polymorphism version rs12979860 IL28B found that the TT genotype also dominated in 33 cases (72.7%), the genotype TG was found in 13 cases (26.5%) and the genotype GG was found in 3 (6,1%) patients (p=0,189).

Conclusion: This study suggests association between the presence of the CC genotype of IL28 gene (rs12979860) and spontaneous clearance of the hepatitis C virus in HIV-infected patients. No significant association was found between genetic variation of the IL28B gene (rs8099917) and SC of the HCV, and TT genotype was recorded as twice as common then TG and GG genotypes in the patients both groups.

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Reversal of fibrosis in HIV/HCV co-infected people who inject drugs (PWID) after successful HCV treatment

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Background: Left untreated, chronic hepatitis C (HCV) infection will lead cirrhosis, hepatic decompensation, or hepatocellular carcinoma in 5-25% of cases over 20 years or more. Progression may be more rapid in men and women co-infected with HIV, with cirrhosis often developing within 10 years. Recent data suggest that an additional benefit of curing HCV infection may be reversal of fibrosis and prevention of disease progression. This has not been well studied in the setting of HIV co-infection and active intravenous drug use. This analysis aims to document reversal of fibrosis after successful HCV treatment in HCV/HIV co-infected people who inject drugs (PWID), to provide additional rationale to expand access to HCV treatment in this population.

Methods: Data were generated within the Canadian HIV/HCV Co-infection cohort, an ongoing national observational study. Demographic, behavioural, and clinical information were collected at 6-month intervals. For this analysis, we performed a repeated measures ANOVA with a post-hoc (Bonferroni correction). We documented the following variables: active PWID (drug use within 6 months prior to HCV treatment), cure of HCV infection, liver fibrosis (APRI scoring) pre-HCV treatment and 24-48 weeks after successful treatment.

Results: There were 91 participants: mean age 52 ± 8 years, 74% male, 89% Caucasian, 10% Aboriginal, with documentation of duration of HCV and HIV infection 14 ± 6.7 and 15 ± 8.6 years respectively prior to HCV treatment initiation. Post hoc analysis (Bonferroni correction) revealed significant differences between APRI at baseline, (1.54 ± 1.62, n = 91) and 24 (0.56 ± 0.45, n = 73) and 48 (0.54 ± 0.37, n = 64) weeks post-treatment (p = 0.00), with no significant difference between the two latter time points. Non-cirrhotic patients (n = 72) had baseline APRI of 0.88 ± 0.5, 24 0.44 ± 0.29 (n = 57) and 48 0.39 ± 0.21 (n = 51) weeks post-treatment. The most marked trends were observed in patients with baseline cirrhosis 3.65 ± 1.72 (n = 19), vs. 1.02 ± 0.58 (n = 16) and 0.94 ± 0.48 (n = 13) 24 & 48 weeks post-treatment, and patients with genotype 3 infection (1.91 ± 2.07 (n = 14) vs. 0.73 ± 0.63 (n = 11) and 0.52 ± 0.43 (n = 11) 24 & 48 weeks post-treatment.

Conclusion: Among HIV co-infected PWID, a significant reversal of fibrosis was measured within 24 weeks of successful HCV treatment, particularly among subjects with baseline cirrhosis and genotype 3 infection. This documents an additional benefit of HCV treatment. Additional data are needed to evaluate these findings in larger number numbers of more diverse patients as well as to study the mechanism and long term clinical benefits of these findings.

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Comorbidities among HIV-infected people who inject drugs (PWID) and men who have sex with men (MSM)

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Successful antiretroviral therapy allows most HIV-infected individuals to achieve a near-normal lifespan. As they age, a number of medical co-morbidities may emerge, and their type and prevalence may be influenced not only by chronic HIV infection, but also its mode of acquisition. There is little data to compare aging populations of HIV-infected people who inject drugs (PWID) and men who have sex with men (MSM), in order to better target health care interventions in these groups. Furthermore, effects of HCV co-infection have yet to be well documented, and need to be well defined if we are to achieved the WHO's goal of HCV elimination by 2030.

For this "Total Patient Care" project, a retrospective analysis was conducted at the Vancouver Infectious Diseases Centre. A chart review (all active HIV-infected consenting patients as of 06/17) was used to identify risk factor for HIV acquisition, HCV co-infection status and to document and code all clinical symptoms requiring medical intervention. All specific medical diagnoses were tabulated and coded by ICD-9 classification. The primary analysis correlated the type and number of comorbidities as a function of HIV risk factor, with an emphasis on conditions needing specific medical intervention.

Key characteristics of the study population (n = 276) include: mean age 52.2 years, 9.1% female, 11.2% Indigenous, 60.9% PWID, 39.1% MSM, 59.4% HCV-infected, 23.9% on OST, 35.8% unemployed, 82.6% HIV plasma viral load <40 copies/ml, 59.4% CD4 >410 cells/mm3. Only 8.9% had no comorbidities, and 54.3% had ≥ 3.   PWID vs. MSM had significantly more comorbidities (3.3 vs. 2.5, p < .05).   The factors associated (p <.05) with more than the median number of comorbidities was age > 56 years, current CD4 count < 200 cells/mm3 and HCV coinfection. Acute STIs requiring antibiotic treatment occurred in 30.4% cases, equally in PWID & MSM. Considering ICD-9 diagnoses requiring pharmacologic intervention, the most common were: anxiety/depression (32.9%), COPD (24.6%), hypertension (20.2%).   Further data on comorbidities requiring hospitalization will be presented.

Among HIV-infected patients enrolled in long-term care, > 90% have a medical comorbidity requiring medical intervention, more frequently in PWID co-infected with HCV and older patients. One third have developed a new acute STI while engaged in HIV care. Models favoring less frequent follow-up in the setting of a long-term response to antiretroviral therapy must consider the need for ongoing engagement to monitor for acute STIs and medically significant comorbidities, particularly in marginalized populations like PWID with respected to HCV co-infection.

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