

Poster Session

[P1] Clinical and Epidemiological Features of Chronic Hepatitis C in Canadian Prisons

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Background: It is estimated that 24 to 30% of Canadian inmates are infected with HCV. There is a limited data on HCV treatment outcomes and adherence rate in inmate population in Canada. We had previously reported that HCV treatment in correctional inmates is feasible and effective. In this study we describe the clinical and epidemiological characteristics as well as some of the challenges of treating HCV in this population.

Methods: Medical charts review of inmates initiated on HCV treatment with Pegylated Interferon/Ribavirin between January 2004 and May 2009. The treatment outcome was assessed by determining the Sustained Virologic Response (SVR) (HCV RNA undetectable 6 months post-treatment).

Results: 536 inmates were assessed for treatment; of those with relevant data, 393 (73.3%) initiated treatment in various correctional institutions. Of these, 96 (24.4%) were lost to follow up after discharge (from the institutions). Of the remaining 297, 59 (20%) were discontinued early per protocol because of inadequate responses, and 11 (3.7%) because of adverse reactions; 152 (51.2%) achieved successful EOT (recommended end of treatment) responses; and 134 (45.1%) experienced SVR (HCV RNA not detected 6 months post EOT) in all the genotypes. Ten were re-infected (after SVR). Diagnosis was made in institutions in 45%, 39% through routine testing and 15% because of various symptoms. Main risk factors included: tattoos (59%), IV drug use (75%). 20% were on methadone maintenance treatment. Of those treated, 38% were within 1 year of diagnosis. In 23% treatment was initiated between 2–5 years, in 31% between 6–10 years, in 6% between 11–15 years and in 3% for more than 16 years after diagnosis. The major reasons given for treatment delay were: ongoing IDU – patient "not ready" and "comorbidities" (60%), not aware of treatment (4%) and not offered nor referred (15%).

Conclusion: We continue to show that HCV can be successfully treated in correctional institutions. Challenges include mobility in and between institutions as well as transition to community. Continuing care in community is one of the main reasons why treatment initiated in institution may not be successful. Strategies to bridge this gap is essential for a successful HCV treatment program in community.

[P2] Relationships between neighbourhood factors, body art piercing availability and risk of hepatitis C acquisition among injection drug users

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Background: Cross-sectional associations between body art piercing (BAP) and hepatitis C (HCV) seropositivity among injection drug users (IDU) have supported the notion that BAP is a risk factor for HCV infection. For IDUs, the relative contribution of BAP to HCV acquisition is likely to be modest. The availability of BAP facilities to IDUs, many of whom live in high-risk inner-city areas, is, however, a potentially relevant exposure that could pattern HCV risk.

Methods: The association between HCV incidence, neighbourhood characteristics, recent BAP, and BAP facility availability was prospectively examined among 784 IDUs living in Montreal, Canada, followed biannually between 2004 and 2008. Cox proportional hazards analysis was conducted, accounting for individual characteristics. Seventy-three percent of participants were seropositive for HCV at baseline.

Results: Fifty-five participants seroconverted to HCV over 180.6 person-years of follow up. The incidence of HCV was 30.5/100 person-years (95% Confidence Interval (CI): 23.2–39.3). Crude Hazard Ratios (HR) for the association between HCV infection and selected risk factors were: recent BAP, HR 1.8 (95% CI: 0.7–5.1); BAP facilities availability, HR 1.5 (95% CI: 1.1–2.0); number of injections last month, HR: 3.9 (95% CI: 2.1–7.3); imprisonment past 6 months, HR: 2.4 (95% CI: 1.4–4.2); neighbourhood low income index, HR: 3.0 (95% CI: 1.7–5.3) and neighbourhood crime index HR, 3.1 (95% CI: 1.7–5.4). After adjustment for neighbourhood and individual characteristics, associations between HCV infection and recent BAP and BAP facilities availability were ameliorated (HR recent BAP, 1.1, 95% CI: 0.4–3.1; and HR BAP facilities availability, 1.2, 95% CI: 0.8–1.7). In multivariate model, frequency of injection (HR: 3.1, 95% CI: 1.6–6.0) and recent imprisonment (HR: 2.0, 95% CI: 1.1–3.7) remained significantly associated with HCV acquisition.

Conclusion: Longitudinal analyses accounting for neighbourhood characteristics do not support a specific association between BAP and HCV infection among IDUs. Individual behaviours and adverse neighbourhood attributes other than availability of BAP facilities, such as socioeconomic disadvantage and crime rate, instead predict HCV and may condition development of the disease through other pathways.

[P3] Hepatitis C treatment in drug users in the Nijmegen district

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We studied the possibilities of treatment of chronic hepatitis C positive injecting drug abusers.

Patients were directly referred by the service for hard drug users to infectious diseases internists.

Between 2003 and 2007 140 hard drug users in the Nijmegen district were screened on seroprevalence of hepatitis B and C, syphilis and HIV. All patients had been using intravenous drugs before and were on methadone maintenance therapy.

We found positive hepatitis B core antibodies in 13 (9%), while no hepatitis B or HIV carriers were found. One patient was found to have late latent syphilis. Hepatitis C antibodies were found in 49 persons (35%). Of these 49 persons 26 could be evaluated. 19 of these 26 patients (73%) were found to have a positive hepatitis C RNA PCR.

In 58% of these cases genotype 3 was found while genotype 1 was found in 42%.

Seven out of 11 (64%) of the patients with genotype 3 could be started on medication, six reached a sustained viral response (SVR). Only two of the 8 patients (25%) with genotype 1 started treatment and reached a SVR.

This study shows that by a combined effort of drug-abuse specialists, infectious diseases internists and nurse-practitioners, we were able to treat 30% of (ex)drug abusers, that were suitable for treatment. This outcome is higher than in other studies. On intention to treat basis the results of patients with genotype 3 were better than those with genotype 1.

[P4] Response to pegylated interferon plus ribavirin in HCV-mono-infected and HIV-co-infected individuals

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Aim and Methods: Co-infected with hepatitis C virus (HCV) is estimated to be around 25% in HIV infected patients but 80% in intravenous drug use (IVDU), since routes of transmission are similar. The aim of this study was to assess sustained viral response (SVR) and its determinants, among which IVDU, in

Hepatitis C (HCV) mono-infected and HIV co-infected patients after HCV treatment.

Methods: We followed 16 HIV infected (11 using antiretroviral treatment) and 43 HIV uninfected patients of whom the majority had a history of current of previous substance abuse, with a chronic active HCV infection starting therapy PEG-Interferon-alpha-2b and ribavirin therapy in two hospitals in the Netherlands in 2004–2008. (Multivariate) regression analyses was performed to assess predictors (including HIV-status, antiretroviral treatment, quality of life, depression score, and functional parameters) for SVR. Repeated analyses of variance were performed to assess trends in quality of life and depression during HCV treatment.

Results: Of all patients, 59% reached SVR. Determinants that were associated with SVR were younger age, genotype 2 or 3 and high baseline alat level. Furthermore, while HIV status in itself was not associated with reaching SVR, HIV coinfected individuals who received antiretroviral treatment had significantly lower SVR rate than HIV coinfected persons not using antiretroviral treatment and HCV monoinfected patients. The latter two groups had similar SVR rates. Substance abuse was not associated with SVR. During HCV treatment, quality of life and depression score initially worsened but then trends reversed reaching or even exceeding baseline quality of life and depression scores in the long term.

Conclusions: In conclusion, an individual approach in a daily clinical practice resulted in HIV infected and uninfected patients, with or without substance abuse, having similar rates of SVR and similar changes in quality of life and depression.

[P5] Withdrawal symptoms as a predictor of mortality in patients HIV-infected through drug use and receiving highly active antiretroviral therapy (HAART)

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Background and Aims: Even in the highly active antiretroviral therapy (HAART) era, individuals HIV-infected through injecting drug use (IDUs) are at increased risk of death due to the burden of competing events such as liver disease, overdose and suicide. The objective of this study was to explore the role which life events' experience, in particular drug-related events such as detoxification or withdrawal symptoms, may play on the risk of death in HIV infected or co-infected HIV-VHC IDUs.

Methods: Our analysis was based on longitudinal data of 296 HIV-infected IDUs, mostly HCV-coinfected (95%), from when they started HAART. Data collection included medical records and patient's self-reports detailing, among other information, life events including drug-related problems. Multiple imputations

for missing data in the explanatory variables together with Cox models were used to identify predictors of death.

Results: During HAART follow-up, 26 deaths occurred, corresponding to 1.8 deaths per 100 person-years. The majority (N = 8) were attributable to liver disease while 5 were from unknown causes (found deceased at home or in a car). After adjustment for age and time-dependent viral load (> 10,000 cp/ml) individuals experiencing withdrawal symptoms had a fivefold increased risk of death with respect to the others.

Conclusions: Withdrawal symptoms in IDUs living with HIV or co-infected HIV-HCV reflect physicians' difficulties in managing their patients' opioid dependence. Early detection and increasing substitution dosages or switching to a more adequate treatment could prevent possible drug-related deaths.

[P6] Hepatitis C treatment for intravenous drug users under substitution in real life

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Introduction: Intravenous drug use (IVDU) is the main route for HCV transmission in Western countries. NIH Consensus Conference suggests that patients on substitution treatment should not be excluded from antiviral therapy. In real life there are many concerns regarding treatment of IVDUs due to higher need for medical care and unreliable non-adherent behavior.

Aim: To evaluate HCV treatment adherence and response rates among IVDUs receiving methadone or buprenorphine and investigate factors influencing treatment outcome.

Patients and methods: We included treated IVDUs with chronic hepatitis C (CHC) who received antiviral treatment while under substitution.

Results: 113 IVDUs with CHC (94/M, mean age = 37.2 yrs were included in the study. 64 (56.6%) patients were on methadone and 49 (43.4%) on buprenorphine. Eight out of 65 (12.3%) patients with available liver biopsy had cirrhosis. Three patients received interferon monotherapy, 15 in combination with ribavirin while the rest (84.1%) received peginterferon+ribavirin. 87/113 (77%) patients completed treatment schedule, while 10/113 (8.8%) discontinued treatment due to side effects and 14/113 (12.4%) due to their own decision. For two (1.8%) of the patients no data were available. 67/87 (77.01%) achieved SVR. From the total number of treated patients with available data, SVR was observed in 67 (60.4%); 22 (19.8%) were no responders or responders/relapsers and 22 (19.8%) had not completed treatment or were lost to follow up.

SVR was associated with male gender (66.3% vs 31.6%, $p = 0.017$), gen2/3 (65% vs 52.6%, $p = 0.001$), adherence to treatment (adherent vs discontinuation due to side effects vs discontinuation by their own decision: 73.3% vs 20% vs 7.1%, $p < 0.0001$) and type of regimen (66.7% for peginterferon combination vs 26.7% for no peg-interferon). 6/8 cirrhotics

achieved SVR. Buprenorphine was associated with higher adherence (8.3% discontinuation or lost during follow up) and SVR rate (83.3%) compared to methadone (28.6% and 42.9% respectively, $p = 0.0001$). Multivariate analysis showed that HCV genotype-2/3, age at initiation of treatment, adherence to treatment and peginterferon+ribavirin regimen were independently associated with SVR.

Conclusion: Our data showed that 60% of IDUs under substitution who received antiviral treatment achieved SVR. Early initiation of treatment and adherence to treatment increased SVR rate. Further research is needed in order to explore the role of buprenorphine in improving adherence to treatment.

[P7] HCV and HIV infections among patients of methadone substitution treatment program

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Until recently the prevalent of HIV and HCV infections and HCV in IDU are not known. The aim of the study was to assess the prevalence of HIV and HCV infections and the distribution of HCV genotypes among patients who started methadone substitution.

Materials: 97 patients addicted mainly to opiates from 14 years (1,5–35) with the mean age of 33 years (2–64).

Methods: All 97 patients were tested for anti-HCV antibodies and anti-HIV antibodies plus p24 antigen using ELISA. All positive anti-HCV results were further processed using real-time PCR and HCV genotype to ascertain viral load and genotype.

Results: In our study HIV positive patients was 27 persons (27%), 88 (90%) anti-HCV positive and 78 (80%) HCV-RNA positive. The mean viral load was 3.479.917 IU/ml (39–45.200.000). Although positive HIV serostatus seemed to correlate with higher HCV viral load (5.442.693,913 vs. 2.816.036,721) this difference did not reach statistical significance. In the group of 75 HCV-RNA positive patients, genotypes 3/3a being the most prevalent (37 cases, 49%), than 1/1b (27 patients, 36%) and 4/4a/4c/4d (11 patients, 14%). HIV positivity did correlate statistically ($p = 0,03$) with higher prevalence of genotype 4. Genotype 3 predominant among HIV negative patients.

Discussion: The over representation of HCV genotype 3 among our patients can suggest common cluster of infection. Predominance of HCV genotype 4 among HIV positive patients is a very interesting and unexpected observation which has been correlated by other authors with tattoos. Among our patients we have not done this analysis yet but in theory the need to have tattoos, at least among drug users, may be a reflection of self damage ideation and be correlated with more risky sexual behaviour.

[P8] Hepatitis C Treatment for Injection Drug Users: A Review of the Available Evidence

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Background and Aims: Globally, 90% of new hepatitis C infections are attributed to injection drug use, but there is a continuing reluctance to treat injection drug users (IDUs) due to concerns about treatment compliance, continuing substance use and mental health issues. A systematic review was conducted to assess treatment outcomes in IDUs; relevant publication indexes were searched until the end of 2007.

Method: Twenty eight treatment trials where the results for IDUs could be identified were included in the review. The majority of the trials including patients with chronic hepatitis C allowed comparison between IDUs and non-IDUS (12/20) compared to studies of patients with acute hepatitis C where the majority of studies included IDUs only (5/8). Most trials included fewer than 100 patients and required a period of abstinence from drug use or enrolment in a drug treatment programs. A range of treatment regimens were used.

Results: There was evidence that a sizeable proportion of IDUs who began hepatitis C treatment achieved a sustained virological response (SVR). In chronic hepatitis C treatment trials, the SVR rate among IDUs was comparable to rates among non-IDUs; in trials prescribing pegylated interferon plus ribavirin, the median rate of SVR among IDUs was 54.3% (range, 18.1%–94.1%), compared with 54%–63% in the large treatment trials. Few trials of acute hepatitis C treatment report on outcomes in IDUs however, among these trials, the SVR among IDUs was 68.5% (n = 89), compared with 81.5% among non-IDUs (n = 65). In the studies where treatment completion was reported, 70.3% of IDUs completed the full course of treatment.

Discussion: These results indicate that IDUs are capable of completing and responding to therapy. This analysis is limited by the small numbers of patients included in each trial, the variation between trials of eligibility criteria, prescribed therapy, age and genotype of patients enrolled and recruitment strategies used. Despite these limitations the evidence suggests IDUs can successfully treated for both chronic and acute hepatitis C. Additional studies are required to determine the optimal circumstances for treatment (e.g., enrolment in drug treatment, the requirement of a period of abstinence from injection drug use, or the establishment of multidisciplinary treatment programs).

[P9] HCV Treatment for HIV/HCV Coinfected Genotype 1 Individuals on Methadone Maintenance in Rhode Island, U.S.A.

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Background and Aims: A fraction of HIV/HCV coinfecting patients undergo HCV treatment. HCV therapy for HCV-monoinfected methadone maintenance (MM) recipients is safe and effective, with integrated care facilitating HCV treatment uptake. The *Caring for HIV/HCV at Methadone Programs (CHAMP)* study evaluated the efficacy of HCV treatment and adherence to pegylated interferon (pegIFN) for coinfecting MM recipients.

Methods: HCV treatment-naïve coinfecting persons >= 18 years with chronic HCV genotype 1, well-controlled HIV (CD4⁺ cell count > 100 cells/ul, or HIV RNA <10,000 copies/ml for CD4⁺ <= 200 cells/ul) on MM were prospectively enrolled in an HCV treatment study at two federally-funded HIV clinics. At weekly clinic visits pegIFN alfa-2a 180 µg injections were directly administered, erythropoietin provided as needed and Beck Depression Inventory II performed. Daily MM recipients had morning ribavirin (RBV) (1,000 mg < 75 kg, 1200 mg >= 75 kg) delivered with methadone at off-site MM clinics. Weekly take-home MM recipients took RBV unsupervised. Target enrollment was 30 participants.

Results: In 18 recruitment months, 11 participants were enrolled. Seven (64%) were female, mean age was 46 (range 37-61 years), 5 were Caucasian, 4 Black, 2 Hispanic. At baseline, 9 (83%) had high HCV RNA (> 800,000 IU/ml), 6 (55%) had at least stage 2 of 4 fibrosis (2 with compensated cirrhosis), 10 (91%) were on HAART, 9 (82%) had undetectable HIV RNA, median CD4⁺ was 508 (range 210-868 cells/ul) and 6 (55%) received daily methadone. All had polysubstance use history (opioids, cocaine, alcohol, marijuana and/or benzodiazepines), non-substance-based psychiatric diagnoses (depression, anxiety, panic, schizoaffective and/or post-traumatic stress disorders) and were on psychotropic medications pre-enrollment.

Two (18%) participants achieved sustained virologic response (SVR). Two completed 48 treatment weeks, 2 dropped out (due to anxiety with subsequent SVR 1, treatment complexity 1), 5 were withdrawn (anemia 2, pneumonia 1, anxiety 1, mania 1) and 2 had treatment discontinued for virologic non-response. Of on-treatment weeks, adherence to pegIFN was >99%.

Conclusions: SVR rate was comparable to historic controls for coinfecting genotype 1 patients, with optimal pegIFN adherence. Poor prognostic factors were common and psychiatric effects barriers to therapy completion. Integrated HIV, HCV and MM therapy may not enhance HCV treatment uptake.

[P10] Is Hepatitis C Prevalence Decreasing among Opiate-Substituted Drug Users Attending an Addiction Outpatient Unit in France?

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Background and Aims: A previous study conducted in our area in 2003 has shown that HCV prevalence in drug users (DU) attending an addiction outpatient unit was 66%. The aim of our prospective study is to know if this prevalence has changed in 2009.

Methods: A screening for Hepatitis B and C virus, HIV, ALT was offered by the addiction physician to each Opiate Maintenance Treatment (OMT) patient. Samples of venous or capillary blood were collected in the unit.

Results: Among the 507 consecutive DU (144 with methadone (MM)- and 363 with buprenorphine (BM)-maintenance), 330 (65.1%) have been screened without difference according to the type of substitution. Patients were mostly male (75.9%); mean age was 30,5 years (33.1 vs. 29.4 in MM and BM patients respectively; $p < 0.05$). Fifteen percent of the samples were performed on capillary blood (30.7% in MM patients vs. 8.3% in BM patients; $p < 0.05$).

While the prevalence of HCV antibodies was 66% in 2003 in this same unit, it was only 18.2% in 2009 ($n = 61$) (36.7% in MM patients vs 10.1% in BM patients; $p < 0.05$). HCV RNA was found in 85.0% of those patients. ALT was higher than the upper limit of normal in 21 out of 42 patients.

Daily excessive alcohol intake was observed more frequently in the DU with HCV antibodies (54.3% vs 21.7%; $p < 0.05$) or with MM treatment (44.4% vs 22,8% in BM patients; $p = 0.03$).

Three patients were antigen HBs-positive and 5 patients were co-infected with HIV-HCV.

Conclusions: This study highlights a clear decrease of the hepatitis C prevalence in DU with opiate maintenance treatment in our centre. It can reflect the effectiveness of sanitary guidelines proposed by French authorities in the middle of the 90's and/or a modification of patients' course in the health-care system with a management of highest HCV risk DU apart from our unit. These data underline the need for an extension of systematic screening in other addiction units of our town to confirm these results.

[P11] Short Course Treatment for HCV Infection: Has The Time Come?

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Background and Aims: The standard duration of treatment for HCV infection is 24–48 weeks, based on viral genotype. New guidelines allow for shorter duration to be considered, especially in the absence of negative prognostic factors. With this in mind, we have compared the efficacy of short duration vs. standard treatment of HCV treatment in IDUs enrolled in an observational modified directly observed therapy (DOT) cohort.

Methods: All patients treated within the Pender Community Center HCV program (Vancouver, Canada) were considered. Treatment was initiated using weekly pegylated interferon administered as DOT along with ribavirin dispensed weekly. The principal endpoint was the absence of detectable viremia 24 weeks after the completion of treatment (sustained virologic response, SVR). Patients completing the standard duration of treatment constituted the control group, while those discontinuing it prematurely were the non-randomized experimental group.

Results: A total of 58 patients were treated, 31 genotype 2/3 (57%), with 34 (59%) receiving 24 weeks of treatment for genotype 2/3 or 48 weeks for genotype 1 infection. Of the other 24 patients (41%), the median course of therapy was 16 weeks. Main reasons for early discontinuation were side effects (7), lack of virologic response for genotype 1 infections (6), addiction-related issues (7) and other (4). Overall, 34 (59%) achieved SVR, 21/34 (62%) and 13/24 (54%) of those receiving full or shorter courses of therapy respectively. For genotype 2/3 infection, a shorter treatment duration was not associated with a lower SVR rate (11/15 [73%] vs. 13/16 [81%]), but this was the case for genotype 1 infection (2/9 [22%] vs. 8/18 [44%]). Of note, 3/4 HIV-co-infected patients with genotype 2/3 infection who received a shorter course of treatment (median 20 weeks) achieved an SVR.

Conclusion: Shorter duration of treatment of HCV can be successful in IDUs, particularly with genotype 2/3 infection. There is an urgent need to evaluate this concept within a controlled clinical trial of patients with genotype 2/3 infection achieving an RVR, with treatment courses as short as 12 weeks being ethically feasible especially if novel approaches to supplement interferon and ribavirin can be considered.

[P12] Treatment of Hepatitis C Virus (HCV) Infection in Active and Recent Injection Drug Users (IDUs): The Vancouver Experience

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Background: Little is known about the true efficacy of current treatment modalities in active or recent IDUs, as they have been largely excluded from clinical trials and guidelines often discourage the initiation of therapy in clinical practice. With this in mind, we have undertaken a prospective cohort study to evaluate the efficacy of the combination of interferon and ribavirin in such a population within a multidisciplinary, inner city primary care clinic.

Methods: All patients treated at the Pender Community Center HCV program (Vancouver, Canada) were considered. Treatment was initiated using weekly pegylated interferon administered as DOT (thrice weekly interferon until 2003) along with ribavirin dispensed weekly, given for 24–48 weeks according to the HCV genotype. Baseline demographic information was collected, and patients were evaluated on a weekly basis for adherence and toxicity, with the primary virologic endpoint being the absence of viremia 24 weeks after the discontinuation of therapy (sustained virologic response, SVR). At all times, patients had access to primary, addiction and specialty nursing and medical care, as well as specialized counseling services and peer-driven group support meetings held at the clinic, coinciding with the supervised administration of the interferon injection.

Results: Between 2002–2009, 119 patients have been treated (mean age 48, 76% male). Patients were almost evenly divided between genotypes 1 and 2/3 (49% vs. 51%), with 6% co-infected with HIV. The majority of patients (97%) were treatment-naïve and attending the peer support group (83%). Treatment was more often with interferon-alpha-2a (65%). Of patients with a determined outcome, SVR was achieved in 51% of cases. Total premature discontinuation rate was 18%, due to toxicity (41%) or other factors (59%), mostly non-adherence and/or a relapse in drug use. As expected, the confirmed SVR rate was higher in the setting of genotype 2/3 (68%) than genotype 1 (33%) infection.

Conclusion: Treatment of HCV infection is feasible and effective within the right clinical setting. Longer term evaluation of therapeutic intervention in this population is urgently needed to optimize patient selection and support protocols to maximize integration of this important population into care.

[P13] Assessment and treatment of chronic hepatitis C virus (HCV) infection in a prospective, observational cohort of injection drug users (IDUs): the ETHOS Cohort

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Background and Aims: Despite 60–90% of IDUs being infected with HCV, few have been assessed and treated. The aims of this study are to evaluate baseline characteristics, specialist referral and uptake of HCV treatment in IDUs assessed for chronic HCV infection.

Methods: The ETHOS Cohort is a prospective observational study of people with a history of injection drug use and chronic HCV infection recruited from a network of clinics (primarily opiate pharmacotherapy clinics) in Australia. Participants are followed prospectively every six months. It is estimated that approximately 300 IDUs will be recruited per year. Data collected include demographics, medical and psychiatric history, drug and alcohol use and data on HCV assessment, willingness to undergo therapy and subsequent treatment uptake. We evaluated baseline characteristics, specialist referral and uptake of HCV treatment among those participants enrolled up to July 2009.

Results: To date, 23 IDUs have been enrolled. The median age is 37 years (range: 19–67 years), 70% are male, 26% had completed 13 years of schooling, 100% were receiving social security benefits and 26% resided in unstable housing. A history of previously treated psychiatric illness was reported in 65% (47% depression, 40% manic depression/bipolar disorder, 7% schizophrenia and 7% anxiety). All participants were currently receiving opiate pharmacotherapy (65% methadone, 22% buprenorphine and 13% buprenorphine/naloxone). No participants were HIV co-infected. The majority of participants were willing to receive treatment for HCV (96%) and 74% planned to initiate treatment in the next 12 months. Following HCV assessment, 39% (n = 9) were considered suitable for treatment, 48% (n = 11) were not considered suitable for treatment now but possibly later and 13% (n = 3) were not considered suitable for treatment. Overall, 57% (n = 13) of those assessed were referred to a specialist and 77% (10 of 13) attended the specialist appointment. HCV treatment was initiated in 13% (n = 3).

Conclusions: Among IDUs assessed for chronic HCV infection at opiate pharmacotherapy clinics, the majority were willing to receive HCV treatment and the majority of those referred to a specialist attended the appointment. Further research will be undertaken within this cohort to understand factors associated with uptake and response to therapy.

[P14] Access to Hepatitis C Testing and Treatment for substance users in Rotterdam, The Netherlands: results of a multidisciplinary approach.

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Background and Aims: Substance users (SU) are a specific social group which is usually characterised as difficult to treat. We estimated prevalence of HCV and HIV among this group and investigated social and behavioural characteristics. Feasibility of treatment of HCV was investigated in the setting of a multidisciplinary approach.

Methods: The study population participated in a program of a large addiction treatment centre for homeless care in Rotterdam between May 2007 and May 2009. Well trained care givers offered information about HCV, screening for HCV and HIV and used extensive questionnaires on risk behaviour and social characteristics. The research physician treated patients at the opiate substitute services with standard of care (SOC) antiviral treatment (pegylated IFN and ribavirin) and monitored psychiatric side effects with questionnaires SF-36 and SCL-90.

Results: Screening: 293 persons were tested on HCV, 274/293 on HIV and 256/293 responded to a standardised questionnaire. 111/293 (38%) were anti-HCV-positive of whom 81 were HCV-RNA positive (73%), 28/111 had cleared HCV (25%) and 2/111 unknown; anti-HIV-positive 7/274 (3%). Genotype (GT) distribution: GT-1: 51% (41/81), GT-2: 5% (4/81), GT-3: 35% (28/81), GT-4: 9% (7/81), unidentified: 1% (1/81). Of the 256 who responded to the questionnaire, 82% of HCV-positives reported heroin use and 94% of HCV-positives reported methadone use in the past 6 months, respectively, 15% of HCV-positives had never injected drugs. (Sexual) risk behaviour, sharing of toiletries and tools enabling drug use as well as prostitution did not show any significant relation with anti-HCV-positivity. 64 chronically infected were referred for treatment, of which 35 received at least 1 dose of SOC. Of those 35, 11 have completed a full course of SOC. 7 stopped because of non-response, 4 because of co-morbidity, 2 on their initiative. 3 Have achieved SVR, 9 are still within 24 weeks of follow-up (FU), 1 is lost in follow-up (FU). We are awaiting further results on treatment including results of the SF-36 and SCL-90 questionnaires.

Conclusions: anti-HCV was positive in 38% of SU. Following our multidisciplinary design, this group proved to be well accessible for screening and antiviral treatment. 15% of the anti-HCV-positive had never injected drugs, indicating other routes of infection unrecognized yet among this group.

[P15] Hepatitis C-Buddy's; peer-support during the hep C cure

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The therapy for hep C is very demanding, both in a physical and emotional way.

It is essential for a patient undergoing a therapy to have a supportive network to cope with the various side effects of the therapy.

Characteristic for drug users is that they don't have any or a loose network around them.

Already, in Belgium hep C therapy to (former) drug users is provided in an individually tailored approach by a multi disciplinary network – consisting of hepatologists, drugservices and psychiatrists, according to the guidelines for the management of hep C in drugusers. However we observed that this approach is not sufficient for some patients and they where in need for extra support (practical and emotional support)

Therefore we started the C-Buddy project at Free Clinic in Antwerp-Belgium in march 2009.

- Buddy's support other people, provide company and support for those in need or in case of a certain illness. Buddy's are at most volunteers who get professional guidance (Wikipedia.nl)

Although not exclusive our first choice is to work with (former)-drugusers – who completed the therapy for hep C – as C-Buddy. To give maximum support to this specific group the C-Buddy's – given their own experiences with the therapy and druguse – are best placed.

We will present our first experiences in working with (former) drugusers as buddy that give support to drugusers during the cure of hep C.

[P16] A pilot project for Hepatitis C treatment using an intensive case management model in Vancouver, Canada

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Background: The Downtown Eastside of Vancouver experienced an explosive outbreak of new Hepatitis C virus (HCV) infections among injection drug users (IDUs) during the mid-1990s resulting in prevalence rates exceeding 90%. Although well documented, this HCV epidemic was largely overlooked in an environment where the prevalence of HIV infection exceeded 20%. With marked reductions in HIV-associated morbidity and mor-

tality in this community, HCV related liver disease has become more common. This study describes a pilot program designed to engage patients in HCV care and treatment.

Methods: Participants for the program were selected from Vancouver Native Health, a full service community clinic. Physicians referred HCV positive patients to the program for a standardized medical intake and HCV information sessions. Patients who decided to receive therapy, and qualified for treatment based on provincial eligibility guidelines, were invited to attend weekly small group sessions led by the clinic nurse. All patients received weekly pegylated interferon injections administered by the nurse at the clinic.

Results: This analysis includes 28 participants assessed for HCV infection between November 2008 and June 2009. All participants acquired HCV through injection drug use and 15 (54%) are HIV co-infected. The mean age is 47.1 years and 20 (71%) are males. The ethnic background includes 18 Caucasians, nine Aboriginals and one African-Canadian. The distribution of HCV genotypes is 75% genotype 1 (n = 21), 21% genotype 3 (n = 6) and 4% genotype 2 (n = 1). To date, 11 of the 28 recruited patients (39%) have initiated pegylated interferon and ribavirin treatment. Two participants (both HIV co-infected with genotype 3) have completed a six-month course of therapy and achieved an end of treatment response. Eight patients are continuing therapy and the outcomes are pending. One participant did not achieve a virological response at 12 weeks and therapy was discontinued.

Conclusions: The intensive case management approach to HCV care and treatment developed at Vancouver Native Health has shown initial success, consistent with similar programs designed to treat marginalized populations. The expansion and refinement of these programs using standardized outcome measurements must be a priority in order to reduce the increasing burden of liver-related morbidity and mortality.

[P17] Overcoming Barriers to Treatment of Chronic C Hepatitis in Italian Drug Users. The Importance of a Co-Management Model of Care

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Despite the high prevalence of hepatitis C virus (HCV) infection among drug users (DU) enrolled in the methadone/buprenorphine maintenance treatment programs (MTP), only few DU are being treated with antiviral therapy. No treatment guidelines are available in Italy for management of HCV infection among DU. Thus, experts in addiction medicine, hepatologists, psychiatrists and psychologists organized a "Working Group on HCV Infection in DU" to implement a multidisciplinary model of care and to draft recommendations. The model includes screening and treatment for HCV infection among DU, counselling pre,

on and post-treatment, psychiatric evaluation and enhanced cooperation with infectious disease specialists. We describe the results of a pilot program designed to integrate care for HCV infection in a setting of MTP. All patients (pts) selected at 5 MTP centres of Northern Italy were screened for HCV antibodies and those with positive results were tested for HCV RNA.

Counselling addressing minimization of transmission and value of treatment was offered. Enrolled pts were treated with peg interferon and ribavirin for 24 or 48 weeks, according to genotype, blood tests were performed and virological response assessed. The 110 treated pts (94 males, 16 females, mean age 36, range 22–61) were evaluated with a depression scale. The mean duration of HCV infection was 10 years. The most frequent genotype was 3 (55 pts; 50%) followed by genotypes 1 (35 pts; 31%), 4 (11 pts; 11%) and 2 (9 pts; 8%). Fifty pts (45%) received methadone and 12 (12%) buprenorphine. Therapy was discontinued early in 13 pts (12%); in 5 pts (4%) because of side effects and in 8 pts (8%) because of non-compliance. The dropout rate was highest during the first 2 months of therapy. Of the 97 pts (90%) that ended the treatment, 74 (76%) were HCV RNA negative. Ten pts (9%) developed depression after the 2nd month of treatment and 3 pts (2.5%) reported craving for drugs or alcohol. However, none of them had to stop the treatment. The symptoms were controlled with antidepressants or changes in substitutive treatment. Six months after the end of therapy, only two patients (1.5%) experienced a relapse. Caring for pts who use illicit drugs presents challenges to the health-care team as it requires patience, experience and understanding of the dynamics of addiction and HCV infection. Improved provider-patient communication, counselling, follow-up at frequent intervals and the work of a multidisciplinary team helped to control the dropout rate and the psychiatric side effects. Further effort is warranted to increase the proportion of DU who initiate treatment for HCV infection.

[P18] Hepatitis care in substance users and prisoners in Arnhem region, The Netherlands

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Background: In 2006 we started up close collaboration with the regional center for drug-use ("Iris-zorg") including the methadon unit and the new heroine unit next to our hospital where ongoing problematic heroin users are treated with heroin. Also we collaborate with regional prisons since 2007.

Methods: Since 2006 the 180 clients of the methadon post as well as other (ex-) drug users are actively offered testing for hepatitis C en B and sent to our department for further evaluation and evt. treatment. The regional prisons offer testing for sexual transmitted diseases including HCV according to risk behavior. In the new heroin unit, 23 of the 33 clients have been tested so far for hepatitis C serology: 12 pos, 7 neg, 4 results pending.

Laboratory evaluation includes routine hematological and biochemical parameters, PT, alfa foetoprotein and quantitative

HCV-RNA, HCV-genotype, Hep.B and HIV serology. Ultrasound is done in all patients, liver biopsy in selected patients, mainly in genotype 1. Before treatment all patients are seen by a Psychiatrist. Viral loads are controlled at week 4, 12, 24, 48 and SVR is measured at week 48 and 72 respectively depending of the duration of treatment with pegylated interferon 2a or 2b in combination with ribavirin 15 mg/kg. We hereby always try to avoid dose reductions and give blood transfusions in case of anemia (erythropoietin is not reimbursed).

Results: Since 2006 we have seen 53 patients with active hepatitis C, 28 were directly referred by the center for drug use, 3 by the special heroine unit, 10 by prisons and 12 by the family physician. Genotype distribution: 30 genotype 1a or b, 18 genotype 2/3, 4 genotype 4 en 1 unknown. So far, 38 patients (69%) have been treated or are currently on treatment. The SVR results so far are 5/11 (45%) for genotype 1/4 (four non-responders, one relapse and one lost to follow-up), 7/10 (70%) for genotype 2/3, 17 patients are still on treatment.

Conclusion: Hepatitis C treatment of drug users and prisoners is cumbersome but very worthwhile, the SVR result are comparable to that of non drug users. By intensifying screening of these clients at risk for hepatitis we expect to see many more patients the next years.

[P19] Barriers and motivation of active drug users to undergo treatment for chronic Hepatitis-C: a qualitative study

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Keywords: Active drug users, chronic Hepatitis-C, treatment, barriers, motives

Background and Aims: In recent years, great strides have been made in improving the treatment of chronic hepatitis-C (CHC). Drug users (DU) are at high risk for CHC, but treatment uptake is still limited. The Amsterdam Public Health Service department, offered DU testing and treatment for CHC using the Drug Users Treatment Program (Dutch-C). The aims of this study were (1) to understand the reasons of DU who refused CHC treatment and (2) to identify the motives of DU who (eventually) underwent treatment. The results of this study will be used to improve the CHC treatment service and to enhance the recruitment campaigns targeted at DU.

Methods: We conducted semi-structured interviews following principles of Grounded Theory (GT). Purposive sampling was used to select the 22 participants. Interviews were held with four DU who refused treatment and 18 who underwent treatment. The interviews were recorded on tape, transcribed and analyzed using open coding. Results were interpreted using the Health Belief model.

Results: Barriers for CHC treatment were: wrong assumptions about the consequences of CHC, fear of treatment side-effects,

doubts about the efficacy of therapy, disbelief in medical treatment, frustration concerning discrepancy in messages from different caregivers about CHC, lack of knowledge about CHC, denial of the disease and rejection by caregivers. The motivation to undergo treatment were: avoidance of negative consequences related to CHC, trust in the organization or caregivers, seeing treatment as an opportunity to change one's life, a chance to feel better and the persuasive influence of other people who were receiving treatment.

Conclusions: We suggest that increasing perceived susceptibility for, and severity of a CHC virus infection among DU will improve treatment enrolment. This should be done by providing tailored information that targets each individual doubt that DU might have regarding treatment, as reasons differ strongly between individuals. Furthermore, the perceived high costs of treatment can be absorbed through offering extensive and ongoing personal support before and during treatment by caregivers. This strategy seems to increase the will to participate and endure treatment. Finally, generating and communicating positive peer opinion regarding participation in treatment should also increase enrolment.

[P20] Massive alcohol consumption in drug users with HCV – does it impact compliance and sustained virological response?

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Injecting drug users are often infected with the hepatitis C virus (HCV). A number of groups have shown that under controlled conditions active injectors can be successfully treated with good compliance and response rates. However it is unclear whether there are sub-groups of patients who are more or less likely to respond to therapy. Some drug users consume alcohol and a minority consume alcohol to excess. It is unclear whether drug users with massive alcohol consumption should be treated and many centers withhold therapy from such patients. In East London we run a community treatment service for injectors with good compliance and response rates. Initially we did not offer therapy to those with massive alcohol consumption (greater than 80–100 units per week) but we have recently treated a small number of massive alcohol consumers and here we report our results.

Results: Eight injectors with massive alcohol consumption (weekly alcohol consumption > 80 units – minimum 90 units per week, maximum 280 units) were offered therapy with 40kD pegylated interferon alfa 2a and ribavirin at standard doses. Two patients (25%) discontinued therapy due to side effects (psychosis in one, thrombocytopenia and mental health in another), 2 did not achieve an SVR (1 did not respond and 1 relapsed), three had an SVR and one is PCR negative 3 months after therapy (presumed to be a responder). Hence of eight massive alcohol consumers who inject drugs four eradicated HCV on therapy.

Conclusions: This small scale, observational pilot study suggests that heavy alcohol consumers with HCV may be considered for antiviral therapy. Response rates are acceptable although the side effects are significant and careful monitoring for both physical and psychiatric side effects is required.

[P21] Inquiries on HCV screening and treatment in addiction centres in France

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Aim: The aim of these inquiries was to evaluate HCV screening and treatment in addiction centres in France.

Methods: 2 inquiries were held with physicians working in addiction centres. The first inquiry was done by phone in October 2006 based on a list of 611 addiction physicians in 301 centres. The second inquiry was done in April 2008 by questionnaire sent to 99 addiction physicians and to 97 hepatologists in 99 centres new partners of the HepTox program.

Results: In the first inquiry, 200 physicians working in 162 centres were interviewed. The centres' total cohort was 15,800

patients, an average of 79 patients per physician. 71% of physicians would propose systematic HCV screening to all patients: 84% in small centres vs. 59% in big centres ($p < 0.05$). 35% of physicians declared that screening was proposed to all patients and accepted. 50% of physicians declared that HCV screening refusal was $< 10\%$. In average each physician reported 7 patients treated for HCV ($< 10\%$ of patients). Results were heterogeneous since 25% of physicians had no patients treated. Although there were more patients treated in big centres, the proportion of HCV patients treated was higher in small centres 21% vs. 3% ($p < 0.05$). The main motivation for addiction physicians to treat HCV was the existence of a tight bond with a hepatologist (94%). In the second inquiry 42 addiction physicians (42%) and 44 hepatologists (44%) responded the questionnaire. Systematic HCV screening was proposed to all patients in 67% of centres but only 36% of patients were actually screened. 8% of patients had an HCV treatment initiated in a centre. A multidisciplinary network including a hepatologist was considered as the most favourable factor for HCV treatment. Alcohol consumption (64%) social issues (38%) and other substance use (36%) were considered as obstacles.

Conclusion: Low HCV screening rate and treatment uptake were observed in addiction centres in France. Important variability was observed according to the centre's size. A tight bond with a hepatologist is considered by addiction physicians as the main factor to encourage HCV management.