

# THE IMPACT OF HIGH RISK BEHAVIORS AND HEPATITIS C ON MORTALITY IN DRUG USERS. A REGISTER BASED COHORT STUDY ON 5350 PERSONS CONNECTED TO DRUG USE TREATMENT 1996-2014.

Øvrehus, A<sup>1</sup>, Nielsen, S<sup>1</sup>, Hansen JF<sup>1</sup>, Holm, DK<sup>2</sup>, Christensen, PB<sup>1</sup>

<sup>1</sup> Department of Infectious Diseases, Odense University Hospital, Odense C, Denmark

<sup>2</sup> Department of Clinical Immunology, Odense University Hospital, Odense, Denmark

## Background:

Hepatitis C (HCV) is prevalent among persons with current or former drug use (PWUD) and mainly among persons who inject drugs (PWID). The impact of chronic hepatitis C (CHC) on mortality in PWUD and PWID is difficult to elucidate due to the high mortality and competing risks of death.

## Methods:

Register based cohort study on persons enrolled in drug treatment services in Funen region (500.000 inhabitants) between 1996-2014 using the National Danish register for drug use treatment (SIB). From SIB history of drug and alcohol use and opioid substitution therapy (OST) was derived. Having ever injected or been on OST was classified as high risk drug use. HCV status (tested, exposed, chronic) was derived from the regional laboratory database. Cause and date of death from the Danish Death Certificate register and classified as liver related, un-natural or other causes. Standardized mortality ratios (SMR) were calculated using sex, age and year of death matched mortality rates (MR) from the Danish National statistics bureau.

## Results:

The cohort comprised 5350 persons (75% male) followed for 49403 person years (PY). There were 571 deaths (11% liver-related, 68% non-natural). In total 2698 had high risk drug use (68% OST, 89% PWID). The SMR was 8.7/5.0 for high risk/low risk users with crude MR (cMR) 1.6 pr. 100/PY and 0.4 pr. 100/PY respectively (cMR ratio 3.6 (2.8-4.6)  $p < 0.01$ ). In high/low risk users test-uptake was 77%/30%, 63%/4% was exposed and 37.5%/1.9% had CHC. In tested PWID adjusting for sex, age, history of OST and age at entry in SIB, adjusted hazard ratio (aHR) for death in HCV-RNA+ as compared to exposed was 1.2 (1.0-1.6)  $p = 0.17$ . For liver related death adjusting for alcohol aHR was 1.4 (0.7-2.8)  $p = 0.33$ .

## Conclusion:

We found a high mortality among PWUD compared to the general population but no significant difference between being HCV exposed and having CHC on overall or liver related mortality in PWID.

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