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1. Background

Because of similar routes of transmission, hepatitis C (HCV) is highly prevalent among HIV infected patients. In recent years, several studies reported an increase in HCV incidence among men who have sex with men (MSM).

Objective

We determined the prevalence of HCV co-infection on national level among the HIV infected population in the Netherlands and identified predictors for HCV co-infection. Special attention has been given to the HCV prevalence among different HIV risk groups in the Netherlands.

2. Methods

Study population:

Within the ATHENA cohort, we selected all patients ever tested for HCV. Results on HCV antibody testing, HCV RNA testing (qualitative and quantitative) and HCV genotyping were used to define a patients HCV status. HCV status of each patient was defined, irrespective of viral clearance or successful treatment in a later stadium during follow-up

HCV co-infection:

defined by any positive HCV test during follow-up.

Active HCV co-infection:

defined by any positive HCV-RNA test during follow-up.

Statistical analysis

Predictors for HCV co-infection were determined using a multivariate logistic regression.

3. Results

12465 patients in the ATHENA cohort (86% of total) were tested for HCV.

11011 (88%) had an HIV infection only

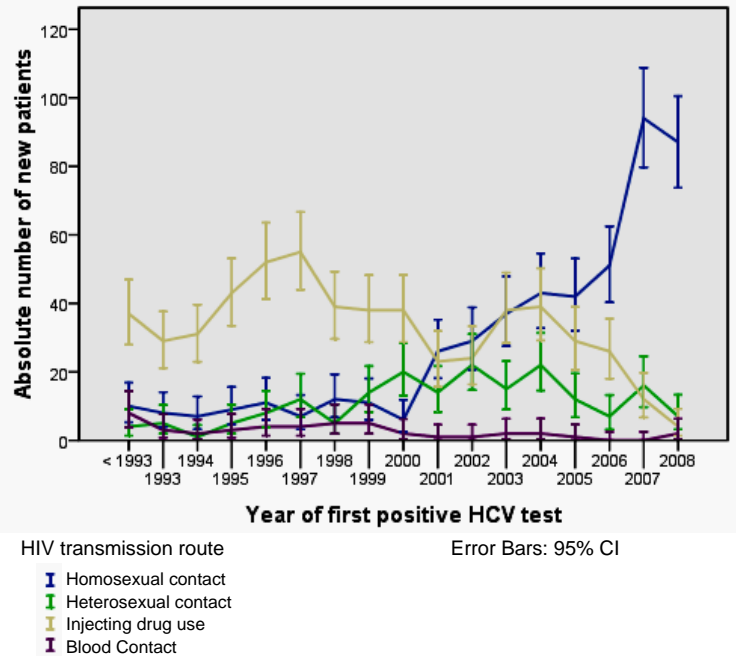
1454 (12%) were HCV co-infected

Of which 934 (7%) had an active HCV infection during follow-up

Table 1: Predictors for HCV co-infection amongst HIV infected patients from the ATHENA cohort

| | | Multivariate Odds Ratio | 95% CI |
|--------------------------------|----------------------------------|-------------------------|----------------|
| Region of Origin | The Netherlands | 1 | |
| | Rest of Europe, including Russia | 1.76 | 1.42 – 2.18 |
| | Africa and the Middle East | 0.61 | 0.48 – 0.78 |
| | Latin America and the Caribbean | 0.48 | 0.37 – 0.63 |
| | Asia | 0.95 | 0.64 – 1.41 |
| | Other or Unknown | 1.15 | 0.76 – 1.74 |
| Median age | at HIV diagnosis | 0.99 | 0.982 – 0.997 |
| Calendar year of HIV diagnosis | < 1993 | 2.33 | 1.82 – 2.97 |
| | 1993 – 1996 | 1.53 | 1.20 – 1.96 |
| | 1997 – 2000 | 1.43 | 1.14 – 1.80 |
| | 2001 – 2004 | 1.38 | 1.12 – 1.71 |
| | 2005 – 2008 | 1 | |
| AIDS events | No | 1 | |
| | Yes | 0.81 | 0.70 – 0.95 |
| Transmission HIV infection | Homosexual | 1 | |
| | Heterosexual | 0.89 | 0.73 – 1.08 |
| | Injecting drug use | 86.89 | 59.00 – 127.97 |
| | Blood contact | 5.16 | 3.58 – 7.45 |
| | Other or Unknown | 2.95 | 2.37 – 3.67 |
| Substance abuse | No abuse | 1 | |
| | Alcohol abuse | 1.19 | 0.82 – 1.70 |
| | Drug abuse | 5.44 | 4.23 – 6.99 |
| | Combined alcohol and drug abuse | 5.21 | 3.48 – 7.80 |

Figure 1: New HCV diagnoses over time (in absolute numbers) amongst the different risk groups of the HIV infected population in the Netherlands.



3. Results continued

Predictors for HCV

- Strongest independent predictors for HCV co-infection are:
- HIV transmission through injecting drug use or blood contact
 - HIV diagnosis before 1993
 - European origin (excluding the Netherlands)

New diagnoses over time

Up to calendar year 2000, the majority of newly diagnosed HCV co-infected patients was injecting drug user, accounting for at least 60% of the new diagnoses yearly.

From 2001 onwards, the number of new HCV diagnoses among MSM started to increase significantly (P=0.008).

From 2004 onwards, a significant decrease among injecting drug users was seen (p <0.001)

From 2006 onwards, the number of new HCV diagnoses among MSM exceeds the number of new HCV diagnoses among injecting drug users significantly, making MSM the most important contributor to new HCV diagnoses.

4. Conclusions

HCV appears to be highly prevalent among HIV infected patients in the Netherlands. Injecting drug users are largely affected by HCV, but from 2001 onwards, the majority of new HCV diagnoses are among MSM.

Since MSM are the most important contributors to the current epidemic, extra efforts should be made to increase awareness about the risk of HCV co-infection and to stop the alarming increase in new diagnoses among this risk group.