



The Hepatitis C epidemic among HIV-positive Men who have Sex with Men started before 2000

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Objective
To estimate the incidence of Hepatitis C (HCV) in HIV-infected Men who have Sex with Men (MSM) over the last 20 years

Background
Since 2000, outbreaks of sexually acquired hepatitis C infection among HIV-infected MSM have been described. Recently, phylogenetic analysis indicated that the spread of HCV started earlier, between 1995 and 2000¹. Our study aimed to estimate the incidence of HCV in HIV-infected MSM over the last 20 years using data from 12 cohorts of the CASCADE collaboration.

Methods
Incidence of HCV was estimated with methods for interval censored data in MSM with a documented HIV seroconversion date. Systematic HCV data collection in each individual cohort started at a different year. To explore possible selection bias

1. van de Laar T, Pybus O, Bruisten S et al. Evidence of a large, international network of HCV transmission in HIV-positive men who have sex with men. *Gastroenterology* 2009; 136:1609-1617

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(testing might be selective before the date of systematic HCV data collection), 4 different strategies were used with respect to inclusion of individuals who were not tested after that date. Incidence estimates were obtained separately for three calendar periods: 1990-1994, 1995-1999, 2000-2007. Only individuals who were at risk in the respective periods (i.e. HIV-positive, in follow-up) contributed to the analysis.

Results
Of 3014 MSM, 216 (7%) had a positive HCV test result. Among those who tested HCV-positive, 88 (41%) were diagnosed before 2000. Although the incidence estimates differ between censoring strategies, all strategies show that the incidence was already substantial in the period 1995-1999 (table 1).

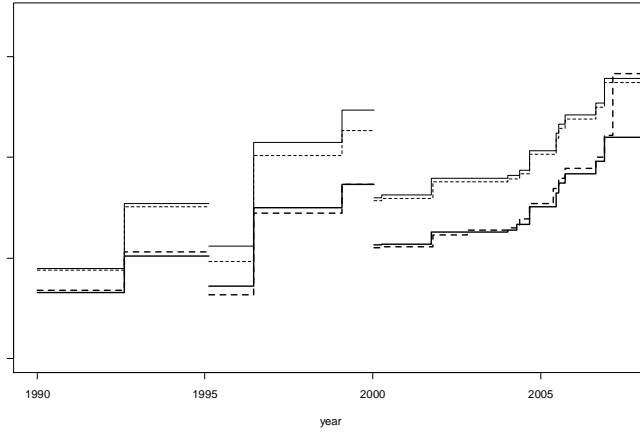
CASCADE collaboration
Steering Committee: Julia Del Amo (Chair), Laurence Meyer (Vice Chair), Heiner C. Bucher, Geneviève Chêne, Deenan Pillay, Maria Prins, Magda Rosinska, Caroline Sabin, Gota Touloumi. **Co-ordinating Centre:** Kholoud Porter (Project Leader), Sara Lodi, Kate Coughlin, Sarah Walker, Abdel Bahiker.
Clinical Advisory Board: Heiner C. Bucher, Andrea De Luca, Martin Fisher, Roberto Muga
Collaborators: **Australia:** Sydney AIDS Prospective Study and Sydney Primary HIV Infection cohort (John Kaldor, Tom Kelleher, Tim Rammaccioti, Linda Gelgor, David Cooper, Don Smith); **Canada:** South Alberta clinic (John Gill); **Denmark:** Copenhagen HIV Seroconverter Cohort (Louise Bruun Jørgensen, Claus Nielsen, Court Pedersen); **Estonia:** Tartu Clinic (Irina Lutsar); **France:** Aquitaine cohort (Geneviève Chêne, Francois Dabis, Rodolphe Thiebaut, Bernard Masquelier), French Hospital Database (Dominique Costagliola, Muguette Guiguer), Lyon Primary Infection cohort (Philippe Vanhems), French PRIMO cohort (Marie-Laure Chaix, Jack Ghossein), SEROCO cohort (Laurence Meyer, Farouq Boufassa); **Germany:** German cohort (Osamah Hamouda, Claudia Kirschner, Barbara Bartmeyer); **Greece:** Greek Haemophilia cohort (Giotta Froudou, Nikos Pantazis, Angelos Hatzakias, Dimitrios Paraskevis, Anastasia Karafoulidou); **Italy:** Italian Seroconversion Study (Giovanni Rezza, Maria Dorrucci, Claudia Balotta), ICONA cohort (Antonella d'Armino Monforte, Alessandro Cozzi-Lepri, Andrea De Luca); **Netherlands:** Amsterdam Cohort Studies among homosexual men and drug users (Maria Prins, Ronald Geskus, Jannie van der Helm, Hanneke Schuitmaker); **Norway:** Oslo and Ullevål Hospital cohorts (Mette Sannes, Oddbjørn Brubakk, Anne-Marte Bakken Krøm); **Poland:** National Institute of Hygiene (Magdalena Rosinska, Joanna Gniwesow); **Portugal:** Universidade Nova de Lisboa (Ricardo Camacho); **Russia:** Pasteur Institute (Tatyana Smol'skaya); **Spain:** Badalona IDU hospital cohort (Roberto Muga, Jordi Tor), Barcelona IDU Cohort (Patricia Garcia de Olalla, Joan Cayla), Madrid cohort (Julia Del Amo, Jorge del Romero), Valencia IDU cohort (Santiago Pérez-Hoyos); **Switzerland:** Swiss HIV Cohort Study (Heiner C. Bucher, Martin Rickenbach, Patrick Franciotti); **Ukraine:** Perinatal Prevention of AIDS Initiative (Ruslan Vahura); **United Kingdom:** Edinburgh Hospital cohort (Ray Breble), Health Protection Agency (Valerie Delpech, Sam Laitman, Gary Murphy), Royal Free haemophilia cohort (Caroline Sabin), UK Register of HIV Seroconverters (Kholoud Porter, Anne Johnson, Andrew Phillips, Abdel Bahiker, Valerie Delpech), University College London (Deenan Pillay), University of Oxford (Harold Jaffe); **African cohorts:** Genital Shedding Study (US: Charles Morrison; Family Health International, Robert Salata, Case Western Reserve University, Uganda: Roy Mugwera, Makerere University, Zimbabwe: Tsungo Chipato, University of Zimbabwe); Early Infection Cohorts (Kenya, Uganda, Rwanda, Zambia, South Africa: Paul Amornkiet, International AIDS Vaccine Initiative).

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Table 1: Incidence in 3 different time-intervals, estimated with 4 different strategies. Numbers are infections per year per 1000 persons.

Period \ Strategy	1	2	3	4
1990-1994	6.7	7.0	4.0	3.8
1995-1999	14.2	14.9	11.7	10.8
2000-2007	8.9	9.0	13.0	7.9

Figure 1: Estimate of cumulative incidence in HIV-infected MSM. Each line represents one strategy.



Conclusions

- The HCV incidence among HIV infected MSM already increased in the mid-nineties
- Results are in agreement with a previous study using phylogenetic analysis