Background and aims

Hepatitis C viral infection (HCV) after injection drug use is very prevalent. The kind of genotype determines the response to treatment. However, no systematic review update on the global genotype distribution of HCV in people who inject drugs (PWID) is available at this moment.

Methods

Selection, grading and clarification of hepatitis reports

• Hepatitis reports were restricted to serological test results for anti-HCV, HCV RNA and HCV genotyping
• If hepatitis reports were available from the same sample(s) and same site(s) in multiple years, only the most recent report was selected.
• Hepatitis reports from one city were assumed to be from a single site unless otherwise stated.
• Hepatitis reports were assumed to be single-site and single sample type unless otherwise stated.
• If calculation or typographical errors were detected in source documents, reports were recalculated and clarified with authors where possible.

Grade and date-based selection of reports

• If recent (2000 onwards) grade A (multi-sample multi-site) reports were available, we selected the range of these and did not select lower graded reports.
• If recent grade A reports were unavailable, we selected the range of recent reports of the next highest grade. Older reports were selected if no recent reports were available.
• Recent grade B (BL single sample, or B2 single sample multi-site) reports were selected in preference to older grade B reports. Recent grade C reports were selected in preference to older grade B reports. Older grade C reports were selected if no grade B reports were available. Grade D reports were only used if no higher grade was available.
• Pre-2000 reports were selected only if later reports were unavailable.

Additional selection and exclusion criteria

• Reports from self-report studies (grade C) or unspecified methodologies (ungraded) were excluded.
• Reports of genetic or saliva testing, or results from sputum were excluded.
• Reports from studies restricted to ‘young’ PWID were excluded.
• Reports from studies excluding PWID of either gender were excluded if mixed gender reports were available.

A systematic review was performed by using the keywords: Genotype, Hepatitis C, Injection drug user / Intravenous drug user / Substance user/ PWID, Name of countries in Pubmed, Embase and Psychinfo. The results were compared with the review of Gower et al. in 2014, concerning the distribution of HCV genotypes in the general HCV population.

Results

Global distribution of HCV genotypes in the general population (outer rim) and PWID (inner circle). HCV prevalence in general population (central map) according to Gower et al.

Conclusions

The most important genotype causing HCV infection in PWID globally is genotype 1, as is the case in the general population, but also genotype 3 is highly prevalent in PWID. Genotype 4 is most prevalent in Africa, spreading into Europe, whereas genotype 2 and 6 are more located in Asia. The most important difference comparing to the general population are generally lower prevalence of genotype 1b, and higher prevalence of genotype 3 in PWID. As the genotype nowadays still determines the treatment, and as there is a different genotype distribution than in the general population, it is important to identify the genotype also in PWID.

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