DIRECT-ACTING ANTIVIRAL THERAPY FOR HEPATITIS C VIRUS INFECTION AMONG PEOPLE WHO INJECT DRUGS: A SYSTEMATIC REVIEW AND META-ANALYSIS

Hajarizadeh B[1], Cunningham EB[1], Reid H[1], Dore GJ[1], Grebely J[1]
1. The Kirby Institute, UNSW Sydney, Sydney, Australia

Background:
There are concerns around poorer adherence and response to direct-acting antiviral (DAA) therapy for HCV among people using drugs. This systematic review assessed DAA treatment outcomes among people with recent drug use and those receiving opioid substitution therapy (OST).

Methods:
Bibliographic databases were searched for studies assessing DAA treatment completion and sustained virologic response (SVR) among people with recent drug use (injecting or non-injecting) and/or those receiving OST. Meta-analysis was used to cumulate estimates and meta-regression to explore heterogeneity.

Results:
Thirty-eight eligible studies were included (n=3,632 participants), including sub-population data of people receiving OST (36 studies, n=2,985), people with recent drug use (22 studies, n=1,550) and people with recent injecting drug use (14 studies, n=937). Recent drug use definition varied across studies (drug use in the past six months and during DAA therapy most commonly used). In OST sub-population, treatment completion was 97.6% (95%CI:96.7-98.4) and SVR was 91.1% (95%CI:88.9-93.3). Among people with recent drug use, treatment completion was 96.9% (95%CI:95.8-97.9) and SVR was 88.4% (95%CI:85.0-91.8). Among people with recent injecting drug use, treatment completion was 96.2% (95%CI:94.9-97.6) and SVR was 85.9% (95%CI:80.7-91.1). In modified intent-to-treat analysis (excluding participants lost-to-follow-up post-treatment without SVR assessment), SVR was 94.7% (95%CI:93.2-96.2) in people receiving OST, 92.8% (95%CI:90.6, 95.1) in people with recent drug use, and 91.4% (95%CI:88.4-94.5) in people with recent injecting drug use. Compared to observational studies, clinical trials reported higher treatment completion (98.2%, 95%CI:97.4-99.0 vs. 96.8%, 95%CI:95.7-97.9), and SVR (94.3%, 95%CI:92.7-95.9 vs. 88.9%, 95%CI:85.9-92.0). Differences were significant in adjusted meta-regression analysis (treatment completion OR: 1.7, 95%CI:1.1-2.7, *P*=0.028; SVR OR: 2.3, 95%CI:1.4-3.9, *P*=0.002). Lost-to-follow-up was higher in observational studies (4.7%, 95%CI:3.0-6.5), than clinical trials (2.1%, 95%CI:0.8-3.3).

Conclusion:
DAA-based treatment outcomes are highly favourable among people receiving OST. Lower treatment responses in people with recent drug use, particularly those with recent injecting, requires further exploration.

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