Increasing national trend of direct acting antiviral discontinuation among people treated for hepatitis C virus 2016-2021

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Background: Direct acting antiviral (DAA) treatment discontinuation may negatively impact hepatitis C virus (HCV) elimination efforts. In Australia, DAA therapy is pharmacy dispensed, generally in 4-week amounts, with the approved duration (8-24 weeks) and volume dispensed reported in pharmaceutical administrative data. This analysis assessed national HCV treatment discontinuation.

Methods: Individuals commencing DAA therapy between 2016-2021 were followed until mid-2022 to assess for treatment discontinuation. Individuals with a single dispensation of their entire treatment course were excluded. Treatment discontinuation was defined as ≥4-weeks of approved treatment duration not dispensed. Factors associated with treatment discontinuation were assessed using Cox regression based on dose-count. Factors associated with retreatment following treatment discontinuation were assessed using logistic regression.

Results: Of 95,275 individuals who were treated, 88,986 were included in analysis of whom 7532 (9%) discontinued treatment. Treatment discontinuation increased from 6% in the first half of 2016 to 15% in 2021 (**Figure**). By 2021, one fifth (19%) of individuals aged <35-years discontinued treatment (increasing from 6% in 2016). Longer treatment durations (vs. 8-weeks) were associated with increased discontinuation risk (12-weeks: adjusted hazard ratio [AHR] 3.23; 95% CI 2.90, 3.59; p<0.001, 16-24-weeks: AHR 6.29; 95%CI 5.55, 7.14; p<0.001). Of individuals discontinuing treatment, 24% were retreated. Early discontinuation (4-weeks treatment dispensed) increased the likelihood of retreatment (adjusted odds ratio [AOR] 3.91; 95% CI 3.44, 4.44; p<0.001). Those with early discontinuation of glecaprevir/pibrentasvir 8-weeks (vs. sofosbuvir/velpatasvir 12-weeks) had a lower likelihood of retreatment (AOR 0.62; 95%CI 0.49, 0.79; p<0.001). Initial treatment discontinuation was associated with increased risk of retreatment discontinuation (AHR 4.41; 3.85, 5.05; p<0.001).

Conclusion: DAA treatment discontinuation increased over time corresponding to increasing treatment uptake through primary care among people who inject drugs. The use of simplified, short duration therapies may reduce treatment discontinuation. Access to adherence support and retreatment will be essential for HCV elimination.

Figure. Proportion of treatment discontinuation between 2016-2021