Keeping track of real progress – updating the population impact of hepatitis B treatment as we strive for elimination

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Background: The National Surveillance for Hepatitis B Indicators Project tracks Australia's progress towards hepatitis B elimination, using mathematical modelling to estimate the burden of disease of hepatitis B in Australia and assess progress against indicators in our National Hepatitis B Strategy. As a complex simulation of hepatitis B prevalence, treatment and care across the Australian population, it is essential to continuously update and refine the models underlying these estimates. This study represents a critical update to the estimated impact of hepatitis B treatment on morbidity and mortality.

Methods: A structured literature review was conducted to assess the most up-to-date evidence on effects of antiviral treatment among individuals with and without cirrhosis, at different disease stages, and use these estimates to update treatment effects in the model. The key disease transition points of interest included progression to hepatocellular carcinoma, decompensated cirrhosis and death. This review included analysis of current clinical guidelines, seminal studies referenced in guidelines, and major systematic reviews or meta-analyses published in the last decade. Population characteristics and treatment effects on disease transition states were extracted where possible.

Results: Four major clinical guidelines, seven systematic reviews and 16 cohort studies were reviewed. There was large variation in treatment effects at disease transition states across different studies, and limited data from the Australian population. The overall evidence suggests that more recent studies demonstrate a greater than previously modelled treatment effect in slowing or preventing disease progression, particularly in individuals with cirrhosis, resulting in greater impact on hepatitis B related mortality.

Conclusion: The results of this study are currently being incorporated into treatment effect indicators in our model. Australia's progress towards hepatitis B elimination, while still requiring intensification, is delivering better than previously recognized results on the lives of people living with hepatitis B.

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