

HBsAg loss and functional cure among people with chronic hepatitis B in Australia within the REACH-B study

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Background: Although antiviral therapy for chronic HBV infection suppresses viral replication, HBV surface antigen (HBsAg) seroclearance (loss) remains a key milestone and surrogate marker of functional cure. We estimated the incidence of HBsAg loss and the proportion achieving functional cure within the Australian Real-World Assessment of people living with Chronic Hepatitis B (REACH-B) study.

Methods: REACH-B is a national cohort study of people with chronic HBV infection (18 clinics, six jurisdictions). Demographic and clinical data are collected from medical records at enrolment and every 6-12 months. This analysis included participants with a documented positive HBsAg at enrolment and ≥ 1 follow-up test. HBsAg loss was defined as a negative HBsAg following a positive test. Functional cure was defined as sustained HBsAg negativity for ≥ 6 months. HBsAg loss incidence was estimated per 100 person-years (PY) follow-up. The proportion with functional cure among those with HBsAg loss was evaluated.

Results: Of 5232 REACH-B participants, 2214 were eligible for this analysis (55% male; median age 48 years; 56% born overseas; 39% First Nations People). At enrolment, 15% (n=334) were HBeAg positive, 6% (n=137) had cirrhosis, and 45% (n=1115) were receiving antiviral therapy. Over 4316 PY follow-up (median 1.7 years), HBsAg loss incidence was 1.53 per 100PY (95%CI: 1.20-1.95), including 0.66 per 100PY (95%CI: 0.38-1.13) among those receiving treatment and 2.49 per 100PY (95%CI: 1.89-3.28) among those under monitoring. Among 66 individuals with HBsAg loss, 25 had ≥ 6 months follow-up post-seroclearance, of whom 18 (72%) maintained HBsAg negativity consistent with functional cure, including 33% (n=2/6) of those receiving treatment and 84% (n=16/19) of those under monitoring.

Conclusion: Annual HBsAg loss of 1-2%, lower among those on treatment, aligns with international studies. Further follow-up will clarify functional cure rates and associated factors. These data provide an essential baseline before introduction of new therapies aimed at improving functional cure.

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