CREIDU

Centre for Research Excellence into Injecting Drug Use

Increasing hepatitis B vaccination in people who inject drugs

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Key messages

- **Injecting drug use is a leading exposure for newly acquired hepatitis B infection (HBV) in Australia.**
- **Uptake and completion of HBV vaccine by people who inject drugs (PWID) is low.**
- **Accelerated schedules have been shown to improve HBV immunisation completion and should be offered to PWID.**
- **PWID should also be offered HBV vaccination in a range of convenient locations and times.**
- **Modest financial incentives for PWID increase the likelihood of vaccine series completion and should be considered as a strategy for this group.**
- **There is an urgent need for changes to current policy and practice to:**
  - **Facilitate use of the accelerated schedule by services targeting PWID;**
  - **Promote access and availability through drug treatment, needle and syringe programs (NSPs) and other harm reduction services and;**
  - **Increase HBV vaccination uptake and completion by incentivising PWID to be vaccinated.**

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What is the issue?

Globally, approximately 1.2 million people who inject drugs (PWID) are estimated to be living with chronic HBV, with almost 6.5 million HBV core antibody positive, indicating exposure to the virus.[1] HBV infection in adulthood may result in fulminant acute hepatitis leading to liver transplantation or death and an increased risk of liver cirrhosis and cancer among those chronically infected.[2] Despite the availability of a vaccine free-of-charge to PWID in Australia, only 26-37% demonstrate evidence of vaccine-induced immunity[3, 4] and injecting drug use remains a leading exposure for newly acquired HBV .[5] Additionally, PWID are at high risk of hepatitis C virus (HCV) infection and HBV/HCV co-infection is associated with significant increased morbidity and mortality.[6]

Vaccination schedules

The standard HBV vaccine schedule for infants and unvaccinated adults is to receive doses at 0, 1 and 6 months. Completing the schedule is crucial as it results in longer lasting immune protection. Rapid or accelerated schedules such as the Barcelona protocol (0, 7, 21 days and 1 year) have been shown to produce a similar immune response to the standard schedule in healthy adults.[7] While some studies raise concerns regarding immunogenicity or the potential immune response in PWID,[8] accelerated schedules are recommended due to challenges in maintaining contact with this group.[9] The World Health Organisation (WHO) recommends using a rapid vaccination schedule over a standard schedule in PWID.[10]

While this recommendation is conditional and supported by very low quality evidence, complementary remarks recommend the use of higher dose vaccine with the rapid regimen and note that completion of three doses is more important than following a specific schedule.

Settings

While less is known about the impact of different settings on HBV vaccination uptake and completion, research has shown that it is feasible to vaccinate PWID in outreach settings and that onsite and immediate availability may facilitate uptake [11]. Offering vaccination without prior screening – the "don't ask, vaccinate" approach - may also be cost effective [12]. WHO recommends that HBV vaccination be provided at locations and times convenient for PWID. The WHO consensus panel also identified a need for cold chain storage and other vaccine preparation and administration equipment for delivery in locations convenient to PWID, such as NSPs, as well as a need for staff training in vaccine administration in non-medical settings [10].

Incentives

Methods trialled to increase vaccination completion among PWID include the use of financial incentives. While observational studies documented higher completion rates when HBV vaccination was offered onsite than when uptake was reimbursed with cash payments [11], a randomised controlled trial (RCT) in San Francisco demonstrated that street-recruited PWID provided with monthly cash incentives to maintain contact with the research team were more likely to complete a 3-dose six month schedule than those engaged and retained through enhanced outreach activities [13].

The Kirby Institute in Australia recently conducted the Hepatitis Acceptability and Vaccine Incentives Trial (HAVIT), the first RCT to directly compare the efficacy of financial incentives ($AUD30 for doses 2 and 3) versus no incentives in increasing hepatitis B vaccine completion in PWID. Participants who were provided with financial incentives were significantly more likely to complete the vaccination series [14]. Results suggest that the provision of modest financial incentives for HBV vaccination completion is a realistic public health strategy with the potential to reduce or eliminate new infections in this group. WHO guidelines recommend offering incentives to PWID for completion of the HBV vaccine schedule [10].

What future steps should be taken?

There is a need for changes to existing policies and practice to increase HBV vaccination uptake and completion among PWID in order, including offering:

- Accelerated schedules which have been shown to improve HBV immunisation completion in PWID;
- Vaccination in a range of convenient locations and times; and,
- Modest financial incentives to encourage completion of the vaccine schedule.

1. PWID should be offered the accelerated schedule

Use of this schedule is not widely supported by health departments. Policy and practice should be updated to reflect evidence.

2. PWID should be offered vaccination in an expanded range of settings including drug treatment, needle and syringe programs (NSP) and other harm reduction services, including outreach programs

There is a need for increased support for the location of vaccine-accredited nurses in NSPs, drug treatment and other services utilised by PWID.

3. PWID should be offered incentives to increase vaccination uptake and completion

Evidence indicates that the provision of modest financial incentives improves HBV vaccine completion in PWID. Australia currently provides incentive payments to parents and caregivers on completion of the infant immunisation schedule [16]. This scheme could potentially be expanded to PWID for completion of the HBV series. While this would require the development of a targeted campaign and additional funding, the infrastructure is already in place, the number of susceptible PWID is relatively small, and the cost of incentives is modest relative to the costs associated with infection and, in particular, HBV/HCV co-infection.

Further information:

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Useful resources

Topp L, Day CA, Wand H, Deacon R, van Beek I, Haber PS, Shanahan M, Rodgers C, Maher L. On behalf of Hepatitis Acceptability and Vaccine Incentives Trial (HAVIT) Study Group. A randomised controlled trial of contingency management to increase hepatitis B vaccination completion among people who inject drugs in Australia. *Addiction*; submitted.

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