Acceptability and preference of point-of-care finger-prick capillary whole-blood and venipuncture tests for hepatitis B viral load among people living with chronic hepatitis B

Roth JM[1], George J[2], Levy MT[3], Wong I[4], Howell J[5], Cabrera G[1], Tu E[1], Martinello M[1,6], Applegate TL[1], Matthews GV[1,7], Hajarizadeh B[1]

[1] The Kirby Institute, University of New South Wales (UNSW), Sydney, Australia
[2] Storr Liver Centre, Westmead Hospital and The Westmead Institute for Medical Research, University of Sydney, Sydney, Australia
[3] Liverpool Hospital and South Western Clinical School, University of New South Wales (UNSW), Sydney, Australia
[4] Blacktown Hospital, Sydney, Australia
[5] St Vincent's Hospital Melbourne and the Burnet Institute, Melbourne, Australia
[6] Prince of Wales Hospital, Sydney, Australia
[7] St Vincent's Hospital Sydney, Sydney, Australia

Background: Effective management of HBV infection relies on HBV DNA testing. Standard-of-care testing requires venous blood samples, processed in central laboratories, making it less accessible to many patients. This study assessed the acceptability of point-of-care HBV DNA testing using finger-prick capillary blood and standard-of-care testing using venipuncture among people with chronic HBV.

Method: Participants with chronic HBV were recruited from six hospital-based hepatitis clinics in Australia. Each participant was offered both onsite finger-prick point-of-care testing (Xpert® HBV Viral Load assay), and venipuncture-based standard-of-care testing for HBV DNA quantification. Participants completed questionnaires assessing their acceptability and preference for each testing method, before (pre-test) and after (post-test) undergoing testing. Acceptability was rated on a five-point Likert Scale, from "very acceptable" to "not at all acceptable".

Results: A total of 259 participants (mean age 48; 46% female) were included. Both sampling methods were highly acceptable. Finger-prick was rated as 'very acceptable' by 81% pre-test and 83% post-test, while 80% rated venipuncture as 'very acceptable' at both time-points. However, when asked about their preferred testing model, most participants preferred finger-prick point-of-care testing with results available in 60-120 minutes, with 68% selecting it at both time-points (Figure). Among 182 participants who preferred any finger-prick point-of-care testing, the most common reason was "it was quick" (68% pre-test, 67% post-test), followed by "easy blood collection" (19% pre-test, 15% post-test). Twenty participants switched their preference from venipuncture-based (pre-test) to finger-prick (post-test) testing, while another 20 did the opposite. The most common reason was "it was quick" (n=13) in the first group and "no need for waiting for results" (n=9) in the second group.

Conclusion: Although both methods were acceptable, participants preferred finger-prick point-of-care over venipuncture-based method for HBV DNA testing. These findings support using finger-prick point-of-care HBV DNA testing in clinical practice, provided accuracy is well demonstrated.

Disclosure of Interest Statement:
The Kirby Institute is funded by the Australian Government Department of Health and Ageing. For this study, a proportion of the GeneXpert diagnostic systems, servicing, training and Xpert® HBV Viral Load assays were provided in-kind by Cepheid.

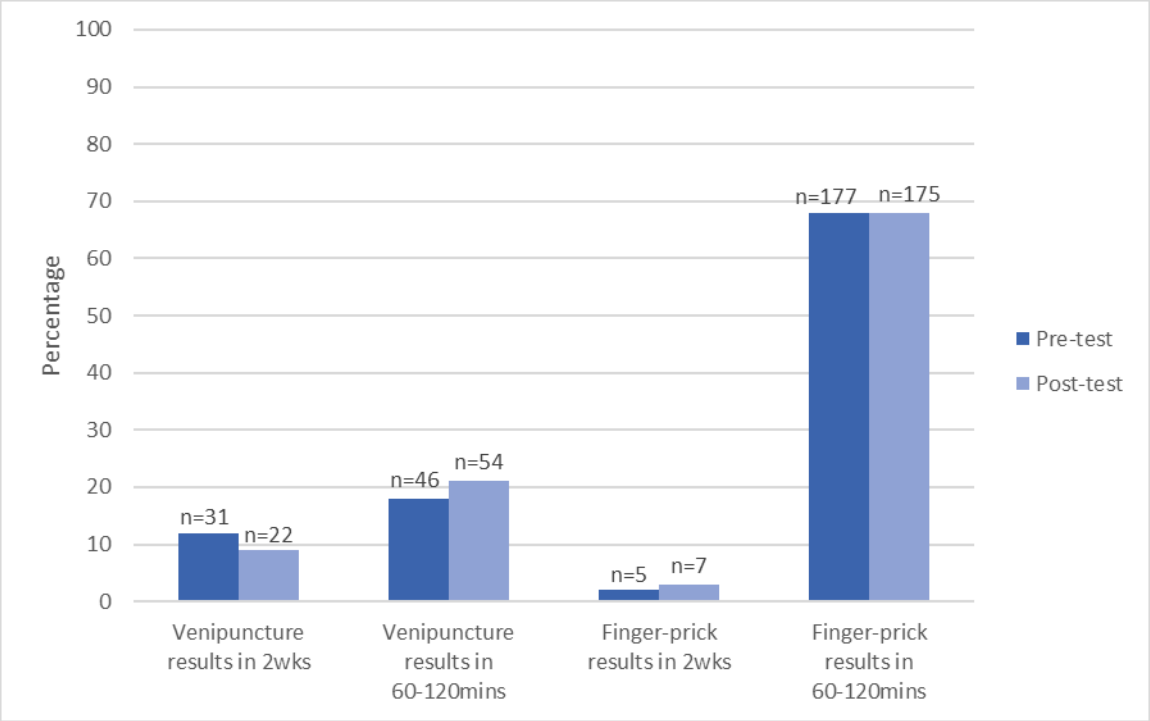

Figure: Preferred model of HBV DNA testing reported by participants, pre-test and post-test.