TIME TO DETECTION OF HEPATITIS C VIRUS INFECTION WITH THE XPERT HCV VIRAL LOAD FINGER-STICK POINT-OF-CARE ASSAY: FACILITATING A MORE RAPID TIME TO DIAGNOSIS

Jason Grebely[1], Beth Catlett[1,2], Indika Jayasinghe[1], Andrey Verich[1], Heather Valerio[1], Philip Cunningham[1,2], Behzad Hajarizadeh[1], Sahar Bajis[1], Marianne Martinello[1], Gregory J. Dore[1], and Tanya L. Applegate[1] on behalf of the ETHOS Engage Study Group

[1]The Kirby Institute, UNSW Sydney, Australia
[2]NSW State Reference Laboratory for HIV, St Vincent's Centre for Applied Medical Research, Darlinghurst, Sydney, Australia.

Background: The Xpert HCV Viral Load Finger-Stick assay (Xpert HCV VL FS) is a point-of-care test that can quantify HCV RNA in 57 minutes, enabling same-visit diagnosis and treatment. However, a more rapid time to result with this assay could improve linkage to HCV treatment. This study evaluated the time to HCV RNA detection using the Xpert HCV VL FS assay from capillary whole-blood collected by finger-stick.

Methods: ETHOS Engage is an observational cohort study among people with recent injecting drug use (previous 6 months) or currently receiving opioid agonist therapy attending drug treatment clinics and needle and syringe programs in Australia. All participants underwent point-of-care HCV RNA testing via Xpert HCV VL FS. The time to HCV RNA detection was evaluated by multiplying the cycle threshold by the cycle time (80 seconds).

Results: Between May 2018-2019, 1,121 participants were enrolled and 1,087 had an available finger-stick sample. Reasons for not having a valid result (n=34) included errors due to low sample volume (n=16, 1.4%), invalid results due to the internal controls being out of range (n=17, 1.5%), and other (n=1, 0.1%). HCV RNA was detected in 25% (268/1,087). Among people with undetectable HCV RNA (n=785), the median time to result was 57 minutes. Among people with detectable HCV RNA (n=268), the median time to HCV RNA detection was 32 minutes and 85% (229/268) had a detectable HCV RNA result in ≤40 minutes. The median time to HCV RNA detection was dependent on HCV RNA level (log10 IU/mL): >7: 26 minutes (n=3); 6-<7: 29 minutes (n=113), 4-<6: 34 minutes (n=110); 3-<4: 43 minutes (n=19); quantifiable-<3: 50 minutes (n=23).

Discussion: These findings suggest that a more rapid time to an HCV diagnosis could be achieved by monitoring the time at which HCV RNA is first detected with the Xpert HCV VL FS test, rather than waiting until assay completion. These findings could lead to reduced wait times for an HCV diagnosis and improve linkage to treatment.

Disclosure of Interest: none