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CORRECTION

Correction: Performance evaluation of the Asante Rapid Recency Assay for verification of HIV diagnosis and detection of recent HIV-1 infections: Implications for epidemic control

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There are errors in the article Abstract. The correct Abstract is: We previously described development of a rapid test for recent infection (RTRI) that can diagnose HIV infection and detect HIV-1 recent infections in a single device. This technology was transferred to a commercial partner as Asante Rapid Recency Assay (ARRA). We evaluated performance of the ARRA kits in the laboratory using a well-characterized panel of specimens. The plasma specimen panel (N = 1500) included HIV-1 (N = 570), HIV-2 (N = 10), and HIV-negatives (N = 920) representing multiple subtypes and geographic locations. Reference diagnostic data were generated using the Bio-Rad HIV-1-2-O EIA/Western blot algorithm with further serotyping performed using the Multispot HIV-1/2 assay. The LAg-Avidity EIA was used to generate reference data on recent and long-term infection for HIV-1 positive specimens at a normalized optical density (ODn) cutoff of 2.0 corresponding to a mean duration of about 6 months. All specimens were tested with ARRA according to the manufacturer's recommendations. Test strips were also read for line intensities using a reader and results were correlated with visual interpretation. ARRA's positive verification line (PVL) correctly classified 575 of 580 HIV-positive and 910 of 920 negative specimens resulting in a sensitivity of 99.1% (95% CI: 98.0–99.6) and specificity of 98.9% (95% CI: 98.1–99.4), respectively. The reader-based classification was similar for PVL with sensitivity of 99.3% (576/580) and specificity of 98.8% (909/920). ARRA's long-term line (LTL) classified 109 of 565 HIV-1 specimens as recent and 456 as long-term compared to 98 as recent and 467 as long-term (LT) by LAg-Avidity EIA (cutoff ODn = 2.0), suggesting a mean duration of recent infection (MDRI) close to 6 months. Agreement of ARRA with LAg recent cases was 81.6% (80/98) and LT cases was 93.8% (438/467), with an overall agreement of 91.7% (kappa = 0.72). The reader (cutoff 2.9) classified 109/566 specimens as recent infections compared to 99 by the LAg-Avidity EIA for recency agreement of 81.8% (81/99), LT agreement of 94% (439/467) with overall agreement of 91.9% (kappa = 0.72). The agreement between visual interpretation and strip reader was 99.9% (95% CI: 99.6–99.9) for the PVL and 98.1% (95% CI: 96.6–98.9) for the LTL. ARRA performed well with HIV diagnostic sensitivity >99% and specificity >98%. Its ability to identify recent infections is comparable to the LAg-Avidity EIA corresponding to an MDRI of about 6 months. This point-of-care assay has implications for real-time surveillance of new infections among newly diagnosed individuals for targeted prevention and interrupting ongoing transmission thus accelerating epidemic control.

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1. Yufenyuy EL, Detorio M, Dobbs T, Patel HK, Jackson K, Vedapuri S, et al. (2022) Performance evaluation of the Asante Rapid Recency Assay for verification of HIV diagnosis and detection of recent HIV-1 infections: Implications for epidemic control. PLOS Glob Public Health 2(5): e0000316. https://doi.org/10.1371/journal.pgph.0000316 PMID: 36962217