

# Laboratory Diagnosis Strategies of HIV/AIDS: Socio-Economic and Ethical Implication for Intervention

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## ABSTRACT

This study aimed at demonstrating the variation in outcomes from applying 5 HIV serum test kits commonly available in Thailand; the immunofluorescent antibody (IFA) and the immunoblot (WB) tests in various combinations.

The study samples were drawn from a collection of 1,500 out/in-patient sera of the Sanpatong Hospital (SPH) that were gathered earlier by systematic random criteria. This collection were separated into two groups by positive and negative results from particle agglutination (PA) test. Samples of 20%, 35 samples and 10%, 135 samples were drawn from these two groups respectively, then subjected to further testing by enzyme link immunosorbent assay (ELISA) kits from 4 different manufacturers and one each of PA, IFA and WB tests. The WB test result was assumed as the gold standard or confirmation of all the others. In this investigation, the WB indeterminate results, 7 from total of 36, was assumed to be positive.

Matching the original PA results of SPH with WB revealed that 8 from 35 positive sera, 22.9%, and 9 from 135 negative sera 6-7% could not be confirmed i.e. the false positive (FP) and false negative (FN) value respectively. The WB confirmation of ELISA test showed that when 4 kits from different manufactures applied together, the matched 4 positive results, 31 samples, were all confirmed but the 4 negatives including any unmatched had 5 against 139, or 3.6% FN. All the FN were 3 matched negatives with one positive. In examining the application of 3 ELISA test, the 4 positives and 4 negatives were included in the positive and negative results respectively. No unconfirmed positive (36 sample) or negative (134 samples) results were found. The variation of confirmation of paired ELISA and pairing between PA and any ELISA tests were considerable. The FP varied from 0-5.3% and 3.1-14.7% respectively while the FN ranged from 0-3.6% and

3.6-5.1% respectively. Confirmation of IFA by WB demonstrated the largest discrepancies. Assuming all indeterminates as positive showed the FP and FN values at 37.8 and 0.8% respectively.

Key words : HIV/AIDS, Laboratory diagnosis strategies, Socio-economic, Ethical, Implication, Intermention.

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