

Abstract

BACKGROUND:

Screening of blood and blood products for human immunodeficiency virus (HIV) is routinely performed using the enzyme-linked immunosorbent assay (ELISA), and the results confirmed by Western blot (WB). However, western blot is expensive and mostly performed in developed countries. A technique more superior or comparable to WB and adaptable to developing countries must be sought. In an effort to identify such a technique, this study determined the efficiency of indirect immunofluorescence assay (IFA) to detect antibodies to HIV-1.

OBJECTIVE:

To determine the accuracy and sensitivity of an in-house immunofluorescence assay (IFA) to detect antibodies to HIV-1 in plasma.

DESIGN:

A comparative study to evaluate the performance of indirect immunofluorescence assay (IFA) and western blot (WB) techniques in the detection of antibodies to HIV-1.

SETTING:

Kenya Medical Research Institute, Centre for Virus Research. The study was conducted between June and December 2001.

METHODS:

The evaluation of IFA as a technique for detecting antibodies to HIV-1 utilized a total of 400 samples. For these samples, IFA was compared with ELISA and particle agglutination (PA) (manuscript under preparation). Of the 400 samples, there were discrepant results in the three assays in only 36 samples. IFA was compared with Western blot (WB) to confirm the true HIV-1 serostatus in these 36 plasma specimens. The IFA technique used acetone-fixed HIV-1 infected MOLT-4 cells in one spot on a Teflon coated slide and uninfected MOLT-4 cells alone in a second spot to assess non-specific fluorescence. Western blot was performed according to the instructions of the manufacturer.

RESULTS:

The sensitivity and specificity of IFA based on 36 plasma specimens tested was 71.4% and 100% respectively. All samples that were HIV seronegative by WB were also HIV seronegative by IFA. However, two (5.6%) samples were HIV seronegative by IFA but seropositive by WB.

CONCLUSION:

The data obtained show that IFA can be used as a primary confirmatory test in Kenya.