Abstract #19

Comparison of Branched DNA to Real-Time PCR for HIV RNA Detection and Quantification

Abstract Category:	Laboratory-based Confirmatory Algorithms Using Supplemental Western Blot, Indirect Immunofluorescence, or Nucleic Acid Amplification Tests
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OBJECTIVE

We sought to compare the abilities of two HIV RNA quantification technologies to one another, with regard to cost, labor and sensitivity. The two methods compared were branched DNA (bDNA, Siemens, Berkeley, CA) and Real-Time PCR (Abbott, Abbott Park, IL).

METHODS

Plasma specimens (239) of previously identified HIV-positive clients were analyzed for HIV RNA content both by branched DNA and by Real-Time PCR. Results from both techniques were compared. Additionally, we carried out a comparative analysis of the time required by each of the methods.

RESULTS

Real-time PCR required approximately 50% of the procedural time of bDNA method. The correlation coefficient of the viral load results between the two assays was found to be very high (0.93). The values obtained by both tests revealed that 91% of the specimens tested by both assays agreed within a 4-fold dynamic range. Of the 239 specimens tested, 116 of the specimens were found to contain <75 copies of HIV RNA by way of the bDNA test (the lower limit of detection of the test). Of those 116 specimens, 47 were found to contain detectable levels of HIV RNA by the Real-time PCR method.

CONCLUSIONS

Newly available HIV viral load tests utilizing real-time PCR require far less labor to perform compared to bDNA. The Abbott Real-Time PCR HIV RNA assay is more sensitive when compared to bDNA. Approximately 40% of specimens found to below detectable levels for HIV RNA when tested by bDNA were in fact found to contain detectable HIV RNA when tested by Real-Time PCR. The implications of this increase in sensitivity for the clinical management of patients remain undefined.