Abstract #49

The Utility Individual HIV-1 NAAT: Identifying Acute HIV-1 Infections by Testing HIV EIA Reactive Diagnostic Specimens Unconfirmed as HIV-1 Antibody Positive by HIV-1 Western Blot

Abstract Category:	Algorithms for Acute HIV Infection Screening
Primary Author:	Robert Myers
Affiliation:	Maryland DHMH Laboratory

ABSTRACT

It has been suggested in the proposed testing strategies to incorporate individual HIV-1 NAAT to identify acute HIV-1 infections in patients with inconclusive or discordant HIV serology results. As part of a comprehensive HIV testing algorithm we used an in-house validated real-HIV-1 (LTR) time PCR assay HIV-1 to detect HIV-1.

As part of a comprehensive HIV testing algorithm we used an in-house validated real-HIV-1 (LTR) time PCR assay HIV-1 to detect HIV-1 RNA in routine diagnostic serology specimens that were HIV EIA reactive but could not be confirmed as HIV-1 antibody positive by WB testing [WB negative(-) or indeterminate(+/-)].

From 10/01/04 through 4/30/07 **350** HIV EIA reactive/ HIV-1 WB (-)/ (+/-) specimens were individually tested by real-time PCR and **25 (7.14%)** were found to be HIV-1 RNA (+). The 25 RNA (+) specimens identified were from 20 individuals (18 suspected HIV-1 of seroconversion and 2 end-stage AIDS patients). HIV-1 viral loads determined by branched DNA (bDNA) from 12 of 18 suspected HIV-1 seroconversion patients ranged 7,565 to >500,000copies/ml (mean: 241,704copies/ml). Twelve of the 18 suspected seroconversion cases were subsequently confirmed as HIV-1 antibody (+) by serological testing of follow-up specimens. The remaining six individuals remain lost to follow-up. Four of 12 confirmed HIV-1 seroconversion cases initially were HIV-1/HIV-2 EIA reactive and HIV-1 WB(-).

In recognition of the increased sensitivity of newer generations of HIV screening EIA's relative to conventional HIV-1 WB confirmatory testing, this study has demonstrated the utility of individual NAAT to identify acute HIV-1 infections in patients with inconclusive serology results. The high HIV-1 viral loads present during most of the acute phase of HIV infections may also allow available diagnostic sera to be quickly used for HIV-1 NAAT in lieu of ideal plasma specimens that would have to be collected later.