Validity of Self-reported CD4 Cell Count and HIV Viral Load among HIV-infected Patients in Houston/Harris County

Adebowale Awosi-Olumo, MD, MS, MPH; Salma Khuwaja MD, MPH, DrPH; Osaro Mgbere, PhD; Taiwo Fasoranti, MD; Brian Goldberg, BA; James Gomez, BS; Lydwina Anderson, BS and Karen Miller, MS

Bureau of Epidemiology, Houston Department of Health & Human Services

Background

• The CD4 T-cell count and plasma HIV RNA viral load are two surrogate markers that are routinely used to determine indications for treatment and monitoring the efficacy of therapy in HIV-infected persons.

• The most recent information on these two biomarkers is the strongest predictor of subsequent disease progression and survival among infected persons.

• The objective of this evaluation was to determine the level of validity of self-reported CD4 cell count and HIV viral load among HIV-infected patients compared to the medical records.

Material and Methods

• Pilot data collected between December 2005 and March 2006 were used for this study.

• Study was a population-based behavioral and clinical outcome cohort surveillance project.

• In-person interviews and medical record abstractions were conducted for 46 patients (18 years and over), infected with HIV and receiving outpatient care in Houston/Harris County.

• Most recent CD4 count and viral load of patients during the last 12 months obtained from both interviews and medical record abstractions (MRAs) were used (Table 1).

• The CD4 and viral loads from MRAs during the same surveillance period were classified according to the options used in the interview instrument.

• The validity and measure of agreement between self-reported and documented information from patients medical records were determined using Kappa Statistics.

Results

Table 1: Descriptive Characteristics of Study Population (N=46)

Table 2: Measures of agreement between CD4 count and HIV viral load (VL) obtained through interviews and medical records abstractions by demographic characteristics

Table 3: Measure of agreement between CD4 count and HIV viral load (VL) obtained through interviews and medical records abstractions by clinical status and demographic characteristics

Conclusion

• The overall measure of agreement between self-reported and medical record abstraction record gave a significant effect (P=0.001) Kappa value of 0.48 for Viral load.

• A non-significant (P=0.05) and poor Kappa value of 0.043 was observed for CD4 counts.

• Fair to moderate agreement levels were obtained when the biomarkers were evaluated against some demographics and behavioral characteristics.

• Limitations

• Small sample size (N=46) may not be representative of the population. Improved sample size may reveal a different level of agreement between the two sources of data within the characteristics.

• The design assumed MRA data was accurate (Gold Standard).

• Interview responses consisted of categorized responses while MRA data were abstraction of actual value.

• MRA HIV VL ≤ less than 400 copies/ml was categorized as undetectable although lower undetectable levels exist.

Treatment

• The results indicate that some significant measure of agreements exist between Viral Load obtained from interviews and medical record abstraction data.

• Choice of data source, medical records or self-reports, will in many instances provide significantly different results and it is likely that this may also be true for other variables of interest to researchers.

• Thus, in the case where no gold standards are available, researchers need to consider carefully the implication of choice of data source on their results.

• These results can serve as a useful guide to researchers contemplating the use of surveys as an alternative to medical record abstraction to ascertain treatment for HIV patient outcomes.

• Findings of this pilot study supports other validation studies with other diseases in which loss to follow-up agreement between the two data sources were found, depending on the data being collected and the setting (1-3).

References


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