

SYSTEMATIC REVIEW AND PAIRWISE META-ANALYSIS COMPARING THE PREDICTIVE PERFORMANCE OF TREATMENT ADHERENCE MEASURES FOR VIROLOGIC FAILURE DETECTION IN PEOPLE LIVING WITH HIV

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Background:

A critical feature of an adherence assessment tool is its ability to predict virologic failure in people living with HIV (PLHIV). We therefore aimed to compare the predictive performance of commonly used adherence measures.

Methods:

We systematically searched MEDLINE, Embase and LILACS up to February 2018 to identify relevant observational studies comparing the effects of any two of the following adherence measurements on virologic outcomes: electronic monitoring, pill count, pharmacy refill, self-report and physician assessment. We analyzed data by pairwise meta-analyses with a random-effects model. The proportion of virologic failures among non-adherent participants in each adherence measure was used to calculate the odds ratio (OR), with 95% Confidence Intervals (95%CI). Heterogeneity was assessed, with potential causes identified by sensitivity and subgroup analysis.

Results:

We included 38 studies with individual patient data for 18,010 patients. All possible comparisons between pairs of the five adherence measures were considered and a total of nine comparison groups could be established. Meta-analysis suggested that self-report was a better predictor of virologic failure than pill count when the recall period was within one week (OR: 2.35, 95%CI: 1.07-5.18, $p=0.03$). Physician assessment had higher odds of predicting virologic failure than did either self-report (OR: 2.63, 95%CI: 1.37-5.26, $p<0.01$) or pharmacy refill (OR: 3.57, 95%CI: 1.69-7.14, $p<0.001$). There was no difference in the predictive performance between any of the other measures that we were able to compare ($p>0.05$). The combination of multiple measures did not increase the predictive value when compared to any of the measures alone.

Conclusions:

Low-cost and simple adherence measures such as self-report predict virologic failure better than or equally well as objective measures. Our results suggest that there is no need to use expensive or time-consuming adherence measures when the objective is to identify PLHIV at risk of treatment failure.

Disclosure of Interest Statement:

The authors have no conflict of interest to declare