PREDICTION MODEL OF PRETREATMENT HIV RNA LEVELS IN NAÏVE HIV-INFECTED PATIENTS: APPLICATION FOR RESOURCE-LIMITED SETTING

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Abstract. A prediction model for pretreatment HIV RNA level ≤100,000 copies/ml would provide a useful tool for selection of abacavir (ABC) or rilpivirine (RPV) in the first-line regimen in a resource-limited setting. Factors associated with pretreatment HIV RNA ≤100,000 copies/ml were determined from a cohort of 1,223 patients divided into a derivation (n = 873) and the remaining in a validation group. Their median [interquartile range (IQR)] age was 36.3 (30.5-42.9) years, CD4 count 122 (39-216) cells/mm³ and pre-treatment HIV RNA level 100,000 (32,449-229,777) copies/ml. Factors associated with pretreatment HIV RNA ≤100,000 copies/ml were non-anemia [odds ratio (OR)= 2.05; 95% confidence interval (CI): 1.28-3.27, p= 0.003], CD4 count ≥200 cells/mm³ (OR= 3.00; 95% CI: 2.08-4.33, p<0.001) and non-heterosexual HIV exposure (OR= 1.61; 95% CI: 1.07-2.43, p= 0.021). The area under a receiver operating characteristic curve was 0.66 (95% CI: 0.62-0.69), but specificity was 97.3%. The prediction model identified a set of readily available clinical data but lacked the requisite predictive performance to fulfill its purpose.

Keywords: abacavir, HIV RNA level, prediction model, rilpivirine, Thailand