Low body mass index as a risk factor for antiretroviral drug-related liver injury among HIV patients

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ABSTRACT

Background: antiretroviral drug-related liver injury (ARLI) is a drug-induced hepatotoxicity due to antiretroviral medication (ARV). It commonly disrupts compliance to treatment and causes treatment discontinuation in HIV-infected patients. Several studies have been conducted on predisposing factors for ARLI including studies on body mass index (BMI) and cluster of differentiation 4 (CD4). The association of BMI and CD4 with ARLI remains controversial as previous studies have demonstrated different outcomes. Our study was conducted to identify the association of low baseline BMI and CD4 cell count as risk factors for ARLI in HIV-infected patients. Methods: this is a cross-sectional study. Subjects were 75 patients with HIV-AIDS who received ARV therapy using fixed-dose combination (tenofovir, lamivudine, efavirenz) at the Teratai HIV outpatient clinic of Hasan Sadikin Hospital in Bandung city. Alanine aminotransferase (ALT) test was performed prior to starting ARV treatment and the test was repeated on the sixth month of therapy. Results: there was no significant difference on the proportion of low baseline CD4 count between ARLI and non-ARLI group (p=0.155). Bivariate analysis demonstrated that regarding the proportion of low baseline BMI, there was a significant difference between ARLI and non-ARLI group (p= 0.001). Multivariate analysis using logistic regression showed that BMI of < 18.5 kg/m2 increased the risk for developing ARLI by 5.53 fold; while CD4 cell count of < 200 cells/μL did not the risk. Conclusion: our study indicates that low baseline BMI may increase the risk for developing ARLI; while low baseline CD4 cell count does not; therefore, we suggest that ALT test should be performed on a routine basis among HIV-AIDS patients for early detection of ARLI, particularly in patients with low BMI.