Correlation between Salivary and Serum Metalloproteinase-9 Levels and CD4 Count in HIV-infected Patients

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ABSTRACT
Matrix metalloproteinases (MMPs) are a large family of calcium-dependent zinc-containing endopeptidases, which are responsible for the tissue remodeling and degradation of the extracellular matrix (ECM), including collagens, elastins, gelatin, matrix glycoproteins, and proteoglycan. MMPs are usually minimally expressed in normal physiological conditions and thus homeostasis is maintained. Over-expression of MMPs results in an imbalance between MMPs activity that can lead to a variety of pathological disorders, including in oral cavity. The aim of this study was to investigate salivary and serum levels of MMP-9 among HIV-positive and -negative patients, and its correlation with CD4. A cross-sectional study was carried out amongst 60 HIV/AIDS patients and 30 HIV-negative individuals attending the referral HIV clinic of Hasan Sadikin Hospital Bandung, West Java, Indonesia. Saliva and serum were collected and assayed for MMP-9 using an electrochemiluminescence immunoassay (ELISA). Data were analyzed using a Chi-square test. Serum MMP-9 levels in HIV-positive patients with antiretroviral (ARV) (12.4 ng/ml) were higher than HIV patients with ARV (11.3 ng/ml) and HIV-negative individuals (10.3 ng/ml). However, there were no significant differences in salivary MMP-9 levels in HIV patients with ARV (25.9 ng/ml) and HIV-negative individuals (24.9 ng/ml). CD4 counts were significant lower in HIV patients compared to HIV-negative individuals. There was no significant correlation between both salivary and serum levels of MMP-9 and CD4 count. However, AIDS patients with CD4 T-cell count <200 cells/mm³ have the highest salivary and serum levels of MMP-9. In conclusion, salivary and serum levels of MMP-9 were higher in HIV patients than those of HIV-negative individuals with no correlation with CD4 count.

Keywords: MMP-9, HIV, CD4.

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