

INTISARI

Latar belakang: Penyakit HIV/AIDS merupakan salah satu penyebab utama kesakitan dan kematian di seluruh dunia. Infeksi HIV yang belum diterapi dicirikan dengan peningkatan *viral load* plasma pada fase awal infeksi diikuti replikasi virus menetap, yang akan memicu aktivasi sistem imun berupa peningkatan produksi sitokin proinflamasi, termasuk IL-6. Aktivasi imun kronik telah dikaitkan dengan kondisi inflamasi persisten dan peningkatan risiko progresi penyakit ke arah AIDS maupun penyakit komorbid non-AIDS. Interleukin 6 diharapkan menjadi salah satu penanda bagi status aktivasi imun dan inflamasi pada infeksi HIV yang belum mendapat terapi ARV.

Tujuan: Penelitian ini bertujuan untuk menganalisis hubungan antara *viral load* HIV dengan kadar IL-6 pada pasien HIV yang belum mendapat terapi ARV.

Metode: Penelitian ini merupakan penelitian observasional analitik dengan desain potong lintang. Subjek adalah pasien terinfeksi HIV yang belum pernah mendapatkan terapi ARV dan menjalani perawatan di Poliklinik Edelweis RSUP Dr. Sardjito. *Viral load* diukur dengan metode *real time* PCR. Kadar interleukin 6 diukur dengan metode *sandwich* ECLIA menggunakan sampel darah perifer. Data karakteristik subjek disajikan dalam bentuk rerata \pm simpang baku jika data terdistribusi normal atau median (minimum – maksimum) jika data terdistribusi tidak normal untuk data kontinu. Data kategorikal disajikan dalam bentuk frekuensi dan proporsi. Hubungan antara *viral load* dengan kadar interleukin 6 dianalisis menggunakan uji korelasi Spearman.

Hasil: Penelitian ini melibatkan 50 pasien terinfeksi HIV stadium klinis 1-4 yang belum mendapat terapi ARV dan memenuhi kriteria inklusi. *Viral load* dan kadar IL-6 ditemukan berbeda secara bermakna antara subjek pada stadium klinis dan jumlah sel CD4 yang berbeda. Terdapat hubungan positif yang bermakna antara *viral load* HIV dengan kadar IL-6 ($r=0,471$; $p=0,006$). Analisis subgrup berdasarkan kategori jumlah sel CD4 mendapatkan hubungan positif bermakna antara *viral load* HIV dengan kadar IL-6 hanya ditemukan pada kelompok subjek dengan jumlah sel CD4 <200 sel/ μ L ($r=0,496$; $p=0,0188$).

Simpulan: Terdapat hubungan positif yang bermakna antara *viral load* HIV dengan kadar IL-6 pada pasien HIV yang belum mendapat terapi ARV, terutama pada kelompok subjek dengan jumlah sel CD4 <200 sel/ μ L.

Kata kunci: HIV, *viral load*, aktivasi imun, interleukin 6

ABSTRACT

Background: HIV/AIDS is one of the leading causes of morbidity and mortality throughout the world. Untreated HIV infection is characterized by the elevation of plasma viral load in early phase of infection, followed by persistent viral replication that would stimulate immune system activation by increasing some proinflammatory cytokines, including IL-6. Chronic immune activation has been linked to persistent inflammatory condition and the increased risk of both disease progression toward AIDS and non-AIDS comorbidities. Interleukin 6 is expected to be one of the biomarker of immune activation and inflammatory status in ARV-naïve HIV infection.

Objective: This study aims to analyze the correlation between HIV viral load and IL-6 concentration in ARV-naïve HIV patients.

Method: This is an analytical observational study with cross sectional design. The subjects were outpatients of Edelweis Clinic of Dr. Sardjito General Hospital who infected with HIV and had no experience of ARV therapy before. Viral load was measured using real time PCR method. The IL-6 was determined by sandwich ECLIA method using peripheral blood samples. Subject characteristics were expressed as mean \pm SD if the data are normally distributed and as median (minimum – maximum) if they are not normally distributed, for continuous data. Categorical data were expressed as frequencies and proportions. The correlation between viral load and IL-6 concentration was analyzed using Spearman correlation test.

Result: Fifty ARV-naïve HIV infected subjects in clinical stage 1-4 who fulfill the inclusion criteria enrolled this study. Viral load and concentration of IL-6 were found significantly different between subjects with different clinical stage and CD4 cell count. There was a significant positive correlation between HIV viral load and IL-6 concentration ($r=0,471$; $p=0,006$). Subgroup analysis based on CD4 cell count category obtained a significant correlation between viral load and IL-6 only in subject with CD4 cell count <200 cell/ μ L ($r=0,496$; $p=0,0188$).

Summary: There was a significant positive correlation between HIV viral load and IL-6 concentration in ARV-naïve HIV infected subjects, particularly in subjects with CD4 cell count <200 cell/ μ L

Keywords: *HIV, viral load, immune activation, interleukin 6*



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GADJAH MADA

Hubungan viral load HIV dengan kadar interleukin 6 (IL-6) pada pasien HIV yang belum mendapatkan terapi ARV
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Universitas Gadjah Mada, 2020 | Diunduh dari <http://etd.repository.ugm.ac.id/>