INTISARI

Latar belakang: Penyakit HIV/AIDS masih menjadi salah satu penyumbang terbesar kesakitan dan kematian di seluruh dunia. Patogenesis infeksi HIV tanpa terapi ARV melibatkan aktivasi sistem imun kronik dan disfungsi sistem imun, yang ditandai dengan penurunan jumlah sel T CD4. Aktivasi imun kronik pada HIV juga dikaitkan dengan peningkatan produksi sitokin proinflamasi termasuk IL-6, yang menciptakan suatu kondisi inflamasi persisten serta peningkatan risiko progresi penyakit kearah AIDS.

Tujuan : Penelitian ini bertujuan untuk menganalisis hubungan antara jumlah absolut sel T CD4 dengan kadar IL-6 pada pasien HIV yang belum pernah mendapatkan 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. Jumlah absolut sel T CD4 diukur dengan metode *flow cytometry*. Kadar interleukin 6 diukur dengan metode *sandwich* ECLIA menggunakan sampel darah perifer. Data karakteristik subjek disajikan dalam bentuk rerata ± 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 jumlah absolut sel T CD4 dengan kadar interleukin 6 dianalisis menggunakan uji korelasi Spearman.

Hasil: Penelitian ini melibatkan 49 pasien terinfeksi HIV stadium klinis 1 – 4 yang belum mendapatkan terapi ARV dan memenuhi kriteria inklusi. Jumlah sel T CD4 dan kadar IL-6 ditemukan berbeda secara bermakna antara subjek pada stadium klinis dan kadar *viral load* yang berbeda. Terdapat korelasi negatif yang bermakna antara jumlah sel T CD4 dengan kadar IL-6 (r=-0,569; p=0,0001). Analisis subgrup berdasarkan kategori *viral load* mendapatkan korelasi negatif bermakna antara jumlah sel T CD4 dengan kadar IL-6 hanya pada kelompok subjek dengan *viral load* >100.000 kopi/mL (r=-0,685; p=0,0001). Analisis subgrup berdasarkan stadium penyakit menemukan korelasi negatif yang bermakna ditemukan pada kelompok stadium 1 – 2 (r=-0,380; p=0,0348) maupun stadium 3 – 4 (r=-0,494; p=0,037).

Simpulan: Terdapat korelasi negatif yang bermakna antara jumlah absolut sel T CD4 dengan kadar IL-6 pada pasien HIV yang belum mendapatkan terapi ARV untuk semua stadium klinis, terutama pada kelompok subjek dengan *viral load* >100.000 kopi/mL.

Kata kunci: *HIV, aktivasi imun, sel T CD4, interleukin 6*

ABSTRACT

Background: HIV/AIDS is still being as one of the highest contributor for morbidity and mortality throughout the world. Pathogenesis of untreated HIV infection comprises of chronic immune activation and immune dysfunction, that is characterized by depletion of CD4 T cell number. Chronic immune activation in HIV has also been linked to high production of some proinflammatory cytokines including IL-6, creating a persistent inflammatory condition and the increased risk of disease progression toward AIDS.

Objective: This study aims to analyze the correlation between absolut CD4 T cell number 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. Absolut CD4 T cell number was measured using flow cytometry method. The IL-6 was determined by sandwich ECLIA method using peripheral blood samples. Subject characteristics were expressed as mean ± SD if the data are normally distributed and as median (minimum – maximum) if they are not normally distributed, for continous data. Categorical data were expressed as frequencies and proportions. The correlation between CD4 T cell number and IL-6 concentration was analyzed using Spearman correlation test.

Result: Fourty nine ARV-naïve HIV infected subjects in clinical stage 1 – 4 who fulfill the inclusion criteria enrolled this study. Absolut CD4 T cell number and concentration of IL-6 were found significantly different between subjects with different clinical stage and viral load. There was a significant negative correlation between CD4 T cell number and IL-6 concentration (r=-0,569; p=0,0001). Subgroup analysis based on CD4 cell number category obtained a significant correlation between CD4 T cell number and IL-6 only in subjects with viral load >100.000 copies/mL (r=-0,685; p=0,0001). Subgroup analysis based on disease stage found significant negative correlation both in stage 1 – 2 subjects (r=-0,380; p=0,0348) and stage 3 – 4 subjects (r=-0,494; p=0,037).

Summary: There was a significant negative correlation between absolut CD4 T cell number and IL-6 concentration in ARV-naïve HIV infected subjects in all clinical stage, particularly in subjects with viral load >100.000 copies/mL.

Keywords: *HIV, immune activation, CD4 T cell, interleukin 6*