

## ABSTRACT

### CORRELATION BETWEEN ABSOLUTE LYMPHOCYTE COUNT AND SERUM CD4 LEVELS IN PATIENTS WITH HUMAN IMMUNODEFICIENCY VIRUS AT DR. H. ABDUL MOELOEK GENERAL HOSPITAL, BANDAR LAMPUNG, DURING THE PERIOD OF JANUARY – DECEMBER 2024

By

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**Background:** Acquired Immunodeficiency Syndrome (AIDS) is a disease caused by Human Immunodeficiency Virus (HIV) infection, leading to severe immune suppression and an increased risk of opportunistic infections. The number of people living with HIV continues to rise, including in Lampung Province. Serum CD4<sup>+</sup> levels and viral load examinations are important indicators of therapeutic success; however, cost and laboratory facility limitations remain obstacles. The absolute lymphocyte count has been reported to correlate positively with serum CD4<sup>+</sup> levels, making it a potential cost-effective alternative examination.

**Methods:** This study is a quantitative research with an analytic observational cross-sectional design. Sampling was carried out using a total sampling technique based on the inclusion and exclusion criteria, resulting in 93 samples. The minimum required sample size was determined using Fisher's formula, which was 48 samples.

**Results:** A significant correlation ( $p < 0.001$ ) with a correlation coefficient ( $r$ ) of 0.644 was found between absolute lymphocyte count and serum CD4<sup>+</sup> levels. By disease stage, correlations were found with  $r = 0.684$  and  $p = 0.014$  ( $p < 0.05$ ) in stage 1,  $r = 0.338$  and  $p = 0.038$  ( $p < 0.05$ ) in stage 3, and  $r = 0.766$  and  $p < 0.001$  ( $p < 0.05$ ) in stage 4.

**Conclusions:** There is a significant positive strong correlation between absolute lymphocyte count and serum CD4<sup>+</sup> levels in patients with Human Immunodeficiency Virus at Dr. H. Abdul Moeloek General Hospital, Bandar Lampung, during the period of January–December 2024. A strong positive correlation was observed in stage 1, a weak positive correlation in stage 3, and a strong positive correlation in stage 4.

**Keywords:** AIDS, HIV, serum CD4<sup>+</sup> levels, absolute lymphocyte count

## ABSTRAK

### KORELASI NILAI ABSOLUT LIMFOSIT DENGAN KADAR CD4 SERUM PADA PENDERITA HUMAN IMMUNODEFICIENCY VIRUS DI RSUD DR. H. ABDUL MOELOEK BANDAR LAMPUNG PERIODE JANUARI – DESEMBER 2024

Oleh

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**Latar Belakang:** Acquired Immunodeficiency Syndrome (AIDS) adalah penyakit akibat infeksi HIV yang menyebabkan penurunan imunitas berat dan meningkatkan risiko infeksi oportunistik. Jumlah ODHIV terus meningkat, termasuk di Provinsi Lampung. Pemeriksaan kadar CD4<sup>+</sup>serum dan viral load penting untuk menilai keberhasilan terapi, namun terkendala biaya dan fasilitas. Nilai absolut limfosit dilaporkan berkorelasi positif dengan kadar CD4<sup>+</sup>serum, sehingga berpotensi menjadi alternatif pemeriksaan yang lebih terjangkau.

**Metode:** Penelitian ini merupakan penelitian kuantitatif dengan desain observasional analitik cross-sectional. Pengambilan sampel menggunakan teknik total sampling sesuai kriteria inklusi dan eksklusi, yaitu 93 sampel. Besar sampel minimal ditentukan menggunakan rumus Fisher, yaitu sebanyak 48 sampel.

**Hasil:** Didapatkan nilai signifikansi ( $p$ ) < 0,001 dengan nilai koefisien korelasi ( $r$ ) sebesar 0,644 pada analisis korelasi nilai absolut limfosit dengan kadar CD4<sup>+</sup> serum. Pada analisis korelasi nilai absolut limfosit dengan kadar CD4<sup>+</sup> per stadium didapatkan nilai  $r = 0,684$  dan  $p = 0,014$  ( $p < 0,05$ ) pada stadium 1, nilai  $r = 0,338$  dan  $p = 0,038$  ( $p < 0,05$ ) pada stadium 3, dan nilai  $r$  sebesar 0,766 dan  $p < 0,001$  ( $p < 0,05$ ) pada stadium 4.

**Kesimpulan:** Terdapat korelasi bermakna dengan kekuatan korelasi kuat positif antara nilai absolut limfosit dengan kadar CD4<sup>+</sup> serum pada penderita *human immunodeficiency virus* di RSUD Dr. H. Abdul Moeloek Bandar Lampung periode Januari - Desember 2024. Terdapat korelasi positif kuat pada stadium 1 korelasi positif lemah pada stadium 3, dan korelasi positif kuat pada stadium 4.

**Kata Kunci:** AIDS, HIV, kadar CD4<sup>+</sup>serum, nilai absolut limfosit