

# Korelasi antara kadar seng plasma dengan jumlah limfosit CD4 penderita HIV/AIDS di RSUPN dr. Cipto Mangunkusumo = The correlation between plasma zinc concentration and CD4 lymphocytes count in HIV/AIDS patients in dr. Cipto Mangunkusumo national general hospital

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## Abstrak

Tujuan: Mengetahui korelasi antara kadar seng (Zn) plasma dengan jumlah limfosit CD4 penderita HIV/AIDS.

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Metodologi: Penelitian potong lintang dilakukan pada 52 orang penderita HIV/AIDS. Wawancara dilakukan pada subyek penelitian untuk mendapatkan data demografi, infeksi oportunistik, asupan energi dan asupan Zn. Data asupan energi didapatkan dengan metode food recall 1x24 jam, sedangkan data asupan Zn didapatkan dengan menggunakan metode FFQ semikuantitatif selama satu bulan terakhir. Status gizi ditentukan berdasarkan IMT. Pemeriksaan laboratorium yang dilakukan meliputi pemeriksaan kadar Zn plasma dan jumlah limfosit CD4. Untuk mengetahui korelasi dipergunakan uji korelasi Pearson dan Spearman-Rank.

Hasil: Subyek penelitian terdiri dari 44 orang laki-laki dan delapan orang perempuan, terbanyak berada pada rentang usia 20-29 tahun (80,8%), dengan rerata usia 26,4613,60 tahun, 75% berpendidikan sedang, 63,5% berada di bawah upah minimum provinsi (UMP), Rerata IMT 19,5512,83 kg/m<sup>2</sup>, 53,8% subyek termasuk kriteria berat badan normal. Nilai rerata asupan energi subyek adalah 1574,11 ± 198,48 kkal/hari, 82,7% subyek mempunyai asupan energi kurang. Rerata asupan Zn 6,9810,92 mg/hari, dan 94,2% subyek mempunyai asupan Zn kurang. Median kadar Zn plasma 13,63 (11,26-44,98) µmol/L, 17,3% subyek mengalami defisiensi Zn. Median jumlah limfosit CD4 81 (2-747)/µL., 75% subyek mempunyai jumlah limfosit CD4 < 200/µL. Sebagian besar (80,8%) subyek mengalami infeksi oportunistik, berdasarkan pola infeksi oportunistik, terbanyak adalah kandidiasis orofaring (55,8%). Didapatkan korelasi bermakna antara kadar Zn plasma dengan jumlah limfosit CD4 (r=0,29;p=0,04), dan korelasi tidak bermakna antara asupan Zn dengan kadar Zn plasma (r=0,07; p=0,65) serta antara status gizi (IMT) dengan jumlah limfosit CD4 (r=0,21; p=1,13).

Kesimpulan: Didapatkan korelasi bermakna antara kadar Zn plasma dengan jumlah limfosit CD4 (r=0,29; p=0,04)

Objective: To investigate the correlation between plasma zinc (Zn) concentration and the number of CD4 lymphocytes count in HIV/AIDS patients

Methods: This was a cross sectional study of 521-HIV/AIDS patients. Interviews were done to get data about demographic characteristics, opportunistic infections, energy intake and Zn intake. The daily energy intake was assessed using 24h food recall method, while dietary Zn intake was assessed by using semi-quantitative FFQ method. Nutritional status was determined BMI. Laboratory examination was done to assess plasma Zn concentration and CD4 lymphocytes count. Pearson's and Spearman's-Rank correlation tests were used to determine the correlation.

Subjects: consisted of forty four (84,6%) males and eight (19,2%) females, most of the subjects were in the 20-29 years old range (80,8%), with mean age of 26,46±3,60 years. Most subjects (75%) had medium education level and 33 subjects (63,5%) were earning under LIMP. Mean value of BMI was 19,55±2,83 kg/m<sup>2</sup> and based on the BMI levels, most of the subjects were normal (53,8%). Mean daily energy intake were 1574,11 ± 198,48 kcal, 82,7% had low energy intake. Mean Zn intake was 6,98 ± 0,92 mg/day, and 94,2% had low Zn intake. Median plasma Zn concentration was 13,63 (11,26 - 44,98) µg/L and 17,3% of subjects had low plasma Zn concentration. Median of CD4 lymphocytes count was 81 (2-747) cells/µL, 75% subjects had CD4 lymphocytes count < 200 cells/µL, 80,8% subjects had opportunistic infections, and the most prevalent was oesophageal-oral candidiasis (55,8%). There was a significant correlation between Zn plasma level and CD4 lymphocytes count ( $r=0,29$ ;  $p = 0,04$ ). No significant correlation were found between Zn intake and plasma Zn concentration ( $r=0,07$ ;  $p=0,65$ ) and between BMI and CD4 lymphocytes count ( $r=0,21$ ;  $p=0,13$ ).

Conclusion: There was significant correlation between Zn plasma level and CD4 lymphocytes count ( $r = 0,29$ ;  $p = 0,04$ ).