

ABSTRAK

STUDI KORELASI LEVEL VITAMIN D SERUM DENGAN KEGAGALAN ORGAN PASIEN SEPSIS DENGAN SKOR *MULTIPLE-ORGAN DYSFUNCTION*

Nira Muniroh Almunawar*, Calcarina Fitriani Retno Wisudarti**, Juni Kurniawaty**

Latar Belakang: Vitamin D merupakan komponen penting dalam sistem imunologi tubuh manusia, termasuk dalam proses tubuh melawan infeksi. Vitamin D dalam tubuh akan terdepleksi seiring perjalanan infeksi. Kondisi defisiensi vitamin D selama infeksi akan mempengaruhi respon imunologis dan vaskuler sehingga meningkatkan potensi kegagalan organ yang dapat dinilai dari skor *Multiple-Organ Dysfunction* (MOD).

Tujuan: Penelitian ini bertujuan mengetahui korelasi level vitamin D serum pada pasien sepsis dengan kondisi gagal organ dengan menggunakan skor MOD.

Metode: Penelitian dilakukan dengan cara belah lintang di ICU RSUP Dr.Sardjito. Subjek penelitian adalah pasien sepsis yang diambil secara konsekutif. Sampel darah subjek penelitian diambil untuk diperiksa kadar vitamin D saat pertama kali terdiagnosis sepsis di ICU dan kemudian dilakukan penghitungan derajat kegagalan organ menggunakan skor MOD. Analisis statistik dilakukan menggunakan program SPSS dengan uji korelasi Spearman, dengan angka signifikansi $p < 0,05$.

Hasil: Sebanyak 25 subjek masuk ke dalam penelitian, 64% di antaranya perempuan. Level vitamin D serum rerata subjek $12,59 \pm 6,48$ nmol/L. Kategori gagal organ ringan ditemukan pada 92% subjek, dan kategori sedang sebanyak 8%. Tidak ditemukan subjek dengan kategori gagal organ berat dan sangat berat dalam penelitian ini. Sebanyak 22,2% subjek dengan level vitamin D serum $< 6,7$ ng/ml masuk ke dalam kategori gagal organ sedang, dibandingkan dengan 1,8% subjek dengan nilai level vitamin D serum $> 6,7$ mg/ml yang termasuk ke dalam kategori yang sama. Hal ini menunjukkan adanya korelasi negatif antara level vitamin D serum dengan kegagalan organ ($p = 0,011$) dengan OR = 16,0 dan CI 95% 1,66-15,49.

Kesimpulan: Terdapat korelasi negatif antara level serum vitamin D dengan kegagalan organ pada pasien sepsis yang dinilai dengan skor MOD.

Kata Kunci: Vitamin D, level vitamin D serum, sepsis, gagal organ, skor MOD.

ABSTRACT

CORRELATION STUDY BETWEEN SERUM VITAMIN D LEVEL AND ORGAN FAILURE IN SEPSIS PATIENTS ASSESSED BY MULTIPLE-ORGAN DYSFUNCTION SCORES

Nira Muniroh Almunawar*, Calcarina Fitriani Retno Wisudarti**, Juni Kurniawaty**

Background: *Vitamin D is essential for human immunological system. Vitamin D is depleted during infection, which have negative impacts on the immunological and vascular responses leading to organ dysfunction. Multiple-Organ Dysfunction (MOD) score can be used to measure this organ dysfunction.*

Objective: *This study aimed to investigate the correlation between serum level of vitamin D in sepsis and organ dysfunction measured with MOD score.*

Methods: *This study was designed as cross-sectional study and carried out in the ICU department of Sardjito Hospital. Septic patients in ICU were collected consecutively. Blood samples from subjects were collected to check vitamin level at first time sepsis was diagnosed in the ICU, then severity of organ failure was assessed using MOD score. Statistical analysis was done using the SPSS program with the Spearman correlation test, with p value < 0.05 considered as significant.*

Results: *A total of 25 subjects enrolled to the study, 64% were female. The subjects' mean serum vitamin D level was 12.59 ± 6.48 nmol/L. 92% subjects were categorized as mild organ failure, and the rest were moderate. Neither severe nor very severe organ failure was found in the study. 22.2% of subjects with serum vitamin D levels < 6.7 ng/ml were included in the moderate organ failure category, compared with 1.8% of subjects with serum vitamin D levels > 6.7 mg/ml who were included in the same category. This shows a negative correlation between serum vitamin D levels and organ failure ($p = 0.011$) with $OR = 16.0$ and 95% CI 1.66-15.49.*

Conclusion: *There was a negative correlation between serum vitamin D levels and organ failure in sepsis patients assessed by MOD score.*

Keywords: *Vitamin D, vitamin D serum level, sepsis, organ dysfunction, MOD score.*