

INTISARI

KESINTASAN 28 HARI PASIEN SEPSIS BERDASARKAN KADAR VITAMIN D PADA AWAL PERAWATAN DI RSUP DR SARDJITO

Maria Nainggolan¹, Rizka Humardewyanti Asdie², Deshinta Putri Mulya³
PPDS Ilmu Penyakit Dalam¹Subbagian Penyakit Tropik Infeksi, SMF Ilmu Penyakit
Dalam² Subbagian Penyakit Alergi imunologi, SMF Ilmu Penyakit Dalam³
Fakultas Kedokteran, Kesehatan Masyarakat dan Keperawatan UGM/RSUP Dr. Sardjito
Yogyakarta

Latar Belakang: Sepsis, suatu disfungsi organ yang mengancam jiwa dan disebabkan respon tubuh terhadap infeksi. Respon imun tubuh terhadap sepsis ditandai dengan respon proinflamasi dan antiinflamasi. Vitamin D memiliki peran penting sebagai regulator sistem imun alami dan sistem imun didapat. Beberapa penelitian terbaru menunjukkan adanya hubungan yang erat antara kadar vitamin D yang rendah dengan morbiditas dan mortalitas pada pasien sepsis.

Tujuan Penelitian: mengetahui kesintasan klinis (*survival rate*) dalam 28 hari pada pasien sepsis berdasarkan kadar vitamin D di awal perawatan di RSUP Dr. Sardjito.

Metode Penelitian: Penelitian kohort prospektif di *High Care Unit* dan bangsal penyakit dalam di RSUP Dr. Sardjito pada Desember 2018 hingga Oktober 2019. Pemeriksaan Vitamin D pada pasien sepsis akan dilakukan dalam 24 jam setelah admisi. Luaran klinis yang dinilai adalah kematian dengan semua penyebab dalam 28 hari sejak terdiagnosis sepsis.

Hasil Penelitian: Dari 88 subjek penelitian dalam 11 bulan terdapat 28 (31,8%) pasien dengan kadar vitamin D $<8,1$ ng/ml dan 60 (68,2%) pasien menunjukkan kadar vitamin D $\geq 8,1$ ng/ml). Mortalitas pada pasien dengan kadar vitamin D $<8,1$ ng/ml lebih tinggi dibanding kelompok vitamin D $>8,1$ ng/ml (92% versus 65%). Analisa multivariat cox regresi menunjukkan hasil kadar vitamin D $<8,1$ ng/ml pada admisi ($p=0,01$) dan syok septik ($p=0,02$) berhubungan dengan kematian pada sepsis. Kelompok pasien dengan Vitamin D $<8,1$ ng/ml memiliki risiko kematian dalam 28 hari yang lebih tinggi dengan *Hazard ratio* 1,95, CI 95% 1,15-3,29, $p=0,01$. Kurva kesintasan *Kaplan Meier* menunjukkan pasien dengan kadar vitamin D $<8,1$ ng/ml memiliki kesintasan yang lebih rendah/pendek dibandingkan dengan pasien kadar vitamin D $>8,1$ ng/ml ($p=0,00$). Rata-rata lama hidup (*mean survival*) adalah 9 hari pada kelompok vitamin D $<8,1$ ng/ml (*median survival* 6 hari) dan 14 hari pada kelompok vitamin D $>8,1$ ng/ml (*median survival* 10 hari).

Kesimpulan: Penelitian ini menunjukkan tingginya angka kejadian defisiensi vitamin D pada pasien sepsis. Pasien sepsis dengan kadar vitamin D $<8,1$ ng/ml memiliki risiko kematian dalam 28 hari yang lebih tinggi. Kesintasan 28 hari pasien dengan kadar vitamin D $<8,1$ ng/ml lebih rendah dibandingkan dengan pasien dengan kadar vitamin D $>8,1$ ng/ml.

Kata kunci: Sepsis, Vitamin D, kesintasan 28 hari

ABSTRACT

28-Days Survival of septic patient based on Vitamin D Status at Dr. Sardjito Hospital

Maria Nainggolan H¹, Rizka Humardewayanti Asdie², Deshinta Putri Mulya³
Residents of Internal Medicine¹

Division of Tropical Medicine, Department of Internal Medicine²

Division of Allergy immunology, Department of Internal Medicine³

Faculty of Medicine, Public Health and Nursing Gadjah Mada University/Dr. Sardjito
Hospital Yogyakarta

Background: Sepsis is a potentially life-threatening condition caused by the body's response to an infection. The host immune response in sepsis is characterized by both pro-inflammatory responses and anti-inflammatory immunosuppressive responses. Vitamin D has immune modulatory effects on both innate and adaptive immune responses. Recent studies have shown an association between low vitamin D status and high mortality in sepsis patients.

Objective: To evaluate vitamin D status of septic patient at Dr. Sardjito Hospital and to describe sepsis 28 days survival with very low vitamin D (<8.1 ng/ml).

Methods: We conducted cohort prospective study in High Care Unit and internal medicine ward at Dr. Sardjito Hospital including patients admitted with sepsis between December 2018 and October 2019. Vitamin D [25OH(D)] was prospectively measured within 24 hours from admission of septic patient. Data collected included serum 25-hydroxyvitaminD levels, the underlying disease, comorbidity, basic hematological and biochemical blood test results, and culture positivity. The primary end point was defined as all-cause mortality within 28 days from admission of septic patients.

Results: We studied 88 patients over 11 months. Vitamin D <8.1ng/ml was observed in 28 (31.8%) of the patient and vitamin D ≥8.1 ng/ml was observed in 60 (68.2%) of the patient. As primary outcome, sepsis related mortality rate was higher in patients with vitamin D levels <8.1 ng/ml (92% versus 65%). Multivariate cox regression analysis showed that vitamin D concentration <8.1 ng/ml on admission (p=0.01) and septic shock (p=0.02) were related of sepsis mortality. The hazard ratio of 28-day mortality was HR 1.95, CI 95% 1.15-3.29, p=0.01 for vitamin D <8.1 ng/ml. Kaplan Meier survival curve indicated that survival of patient with vitamin D <8.1 ng/ml was significantly shorter than those whose vitamin D concentration >8.1 ng/ml (p=0.00). The average survival time was 9 days for vitamin D levels <8.1 ng/ml group (median survival time 6 days) compared with 14 days among those with vitamin D levels >8.1 ng/ml group (median survival time 10 days).

Conclusion: This study demonstrated that low vitamin D levels are common among septic patients. Lower serum vitamin D levels (<8.1 ng/ml) at admission were associated with 28 day mortality in septic patients. We observed shorter survival time among low vitamin D levels (<8.1 ng/ml) patients.

Keywords: Sepsis, Vitamin D, 28-days survival