

**HUBUNGAN ANTARA POLIMORFISME LOKUS rs7041, rs4588
PADA GEN RESEPTOR PROTEIN PENGIKAT VITAMIN D
DENGAN MORTALITAS PASIEN SEPSIS**



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ABSTRAK

HUBUNGAN ANTARA POLIMORFISME LOKUS rs7041, rs4588 PADA GEN RESEPTOR PROTEIN PENGIKAT VITAMIN D DENGAN MORTALITAS PASIEN SEPSIS

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Defisiensi vitamin D dikaitkan dengan peningkatan risiko mortalitas pasien sepsis. Polimorfisme lokus rs7041 dan lokus rs4588 gen reseptor *Vitamin D Binding Protein* (VDBP) menyebabkan meningkatnya risiko defisiensi vitamin D secara bermakna pada negara subtropis (Yordania), sedangkan penelitian yang serupa untuk daerah tropis (Indonesia) belum ada. Berdasarkan latar belakang tersebut maka dilakukan penelitian yang bertujuan untuk menganalisis hubungan polimorfisme lokus rs7041, rs4588 pada gen reseptor pengikat vitamin D dan status vitamin D dengan mortalitas pasien sepsis.

Penelitian ini dengan jenis observasional analitik dengan desain *cohort*. Populasi adalah pasien sepsis yang dirawat di ruangan ICU RSUP Dr. M. Djamil Padang mulai bulan Juli 2022 hingga bulan September 2022. Dilakukan pemeriksaan polimorfisme gen VDBP pada lokus rs7041 dan rs4588 dan kadar vitamin D. Analisis hubungan antara kedua kelompok dengan menggunakan uji chi-square/uji fisher test.

Hasil penelitian didapatkan adalah; Polimorfisme lokus rs7041 yang mengalami *mutan* lebih banyak mengalami kejadian *non survive* dibandingkan *survive* (61,9% vs 36,8%) dengan *p-value* 0,025 dengan RR 1,625, CI 95% (1,044 – 2,529). Polimorfisme lokus rs4588 yang mengalami *mutan* lebih banyak mengalami kejadian *non survive* dibandingkan *survive* (45,2% vs 21,1%) dengan *p-value* 0,022 dengan RR 1,622, CI 95% (1,095 – 2,402). Polimorfisme lokus rs7041, rs4588 pada pasien sepsis *non survive* lebih banyak *mutan* dibandingkan *wild type*.

Kesimpulan : terdapat hubungan antara polimorfisme lokus rs7041 dan rs4588 terhadap mortalitas pasien sepsis.

Kata Kunci : polimorfisme, rs7041, rs4588, VDBP, mortalitas, sepsis

ABSTRACT

ASSOCIATION BETWEEN VITAMIN D-BINDING PROTEIN POLYMORPHISM LOCI rs7041, rs4588 WITH MORTALITY IN SEPSIS PATIENT

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Vitamin D deficiency was associated with increased mortality risk in sepsis patients. Loci rs7041 and rs4588 polymorphism of the *Vitamin D Binding Protein* (VDBP) gene receptor caused a significantly increased risk of vitamin D deficiency in subtropical countries (Yordania). At the same time, similar studies for the tropics (Indonesia) has not been found yet. Based on this background, we analyzed the association of the loci rs7041, rs4588 polymorphism in the *Vitamin D Binding Protein* gene receptor and vitamin D status with the mortality of sepsis patients.

This study was an analytical observation type with a cohort design. The population was sepsis patients admitted to the Intensive Care Unit of General Hospital Dr. M. Djamil Padang from July 2022 to September 2022. VDBP gene receptor at the loci rs7041, rs4588 polymorphism and vitamin D levels were examined. The relationship between the two groups was analyzed using the chi-square test/fisher test.

The results obtained ; The mutants in locus rs7041 were more *non-survive* than *survive* (61.9% vs. 36.8%) with a p-value = 0.025, RR 1.625, 95% CI (1.044 - 2.529). Mutants in locus rs4588 were more *non-survive* than *survive* (45.2% vs. 21.1%) with a p-value = 0.022, RR 1.622, 95% CI (1.095 - 2.402). Loci rs7041, rs4588 polymorphisms in *non-survive* sepsis patients were more *mutant* than *wild type*.

Conclusion: There was an association between Loci rs7041 and rs4588 polymorphism and mortality of sepsis patients.

Keywords : polymorphism, rs7041, rs4588, *Vitamin D Binding Protein*, mortality, sepsis