

## INTISARI

### KADAR ZINK SERUM PADA VITILIGO NONSEGMENTAL DI RSUP DR SARDJITO

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**Latar Belakang:** Vitiligo adalah penyakit autoimun yang menyebabkan macula atau patch depigmentasi pada kulit atau selaput lendir. Autoimunitas, penghancuran diri melanosit, faktor saraf-kimia, gen dan stres oksidatif adalah beberapa hipotesis yang dianggap sebagai faktor yang mendasari patogenesis vitiligo. Zink adalah elemen jejak yang terkait dengan etiologi dan patogenesis vitiligo karena merupakan bagian integral dari metaloenzim yang diperlukan dalam proses melanogenesis. Metaloenzim ini mengkatalisasi penyusunan dopakrome menjadi asam 5,6-dihydroxy indole-2 asam karboksilat. Zink juga dianggap sebagai antioksidan yang konstituen superoksida dismutase yang melindungi dari sitotoksitas melanosit dan penghambatan tirosinase dalam stres oksidatif.

**Tujuan:** Untuk menentukan kadar seng serum dalam vitiligo nonsegmental dan tingkat korelasi seng serum dengan skor VASI

**Metode:** Penelitian ini dilakukan dengan desain kasus kontrol. Diagnosis vitiligo dibuat dengan pemeriksaan fisik dan perhitungan skor *Vitiligo Area Severity Index* (VASI). Tingkat serum zink diukur dengan spektrometri *flame atomic absorption*. Uji normalitas menggunakan Shapiro-Wilk untuk menentukan distribusi data. Data disajikan sebagai frekuensi, persentase, rata-rata dan standar deviasi. Perbandingan kadar zink serum pasien dan kontrol dilakukan dengan uji Mann Whitney. Analisis korelasi Pearson dilakukan untuk menentukan korelasi antara kadar serum zink dan skor VASI.

**Hasil:** Populasi subyek vitiligo memiliki usia rata-rata 40,8 tahun ( $\pm 14,1$ ) dengan jenis vitiligo terbanyak adalah vitiligo vulgaris (54,2%). Analisis Mann Whitney menunjukkan kadar seng serum pasien vitiligo lebih rendah daripada kadar seng serum individu sehat ( $p < 0,001$ ). Analisis bivariat menunjukkan kadar serum seng yang rendah 9,3 kali lipat (OR 9,3; 95% CI 1,77-48,72) meningkat pada pengembangan vitiligo nonsegmental. Uji Pearson menunjukkan korelasi negatif kadar seng serum pada skor VASI pada pasien vitiligo ( $r = -0,355$  dan  $p = 0,045$ ).

**Kesimpulan:** Kadar zink serum dalam vitiligo lebih rendah dari kadar seng serum pada individu sehat. Semakin rendah kadar seng serum pasien vitiligo, semakin tinggi skor VASI

**Kata kunci:** vitiligo, nonsegmental, zink

## ABSTRACT

### ZINC SERUM LEVEL IN NONSEGMENTAL VITILIGO PATIENTS IN DR SARDJITO HOSPITAL

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**Background:** Vitiligo is an autoimmune disease results in depigmentation of the skin or mucous membranes. Autoimmunity, self destruction of melanocytes, nerve-chemical factors, genes and oxidative stress are several hypotheses considered as underlying factors in vitiligo pathogenesis. Zinc is a trace element related with melanogenesis and component of metalloenzymes. Metalloenzymes catalyse the rearrangement of dopachrome to form 5,6-dihydroxy indole-2 carboxylic acid. Zinc considered as antioxidants which constituents of superoxide dismutase that protecting from cytotoxicity of melanocytes and inhibition of tyrosinase in oxidative stress.

**Objective:** To determine serum zinc level in nonsegmental vitiligo and the correlation zinc serum level with VASI score

**Method:** This study was conducted with a case control design. The vitiligo diagnosis was made by physical examination and calculation of *Vitiligo Area Severity Index* score (VASI). The serum zinc level was measured with *flame atomic absorption* spectrometri. Normality test using Shapiro-Wilk to determine data distribution. Data was presented as frequency, percentage, mean and standard deviation. Comparison of serum zinc level of patients and controls were performed by Mann Whitney test. Pearson's correlation analysis was carried out to determine correlation between zinc serum level and VASI score.

**Results:** The population of vitiligo subjects had an average age of 40.8 years ( $\pm 14.1$ ) with the most type of vitiligo being vitiligo vulgaris (54.2%). Mann Whitney analysis showed serum zinc levels of vitiligo patients were lower than serum zinc levels of healthy individuals ( $p < 0.001$ ). Bivariate analysis showed low zinc serum level 9,3fold (OR 9,3; 95% CI 1,77-48,72) increased of developing vitiligo nonsegmental. The Pearson test showed a negative correlation of serum zinc levels on VASI scores in vitiligo patients ( $r = -0.355$  and  $p = 0.045$ ).

**Conclusion:** Serum zinc levels in vitiligo are lower than serum zinc levels in healthy individuals. The lower the serum zinc level of vitiligo patients, the higher the VASI score

**Keywords:** vitiligo, nonsegmental, zinc