

Level of Maternal Zinc Serum as Risk Factor of Preeclampsia

Kadar Seng Serum Maternal sebagai Faktor Risiko Preeklamsia

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Abstract

Objective: To investigate the relationship between serum zinc levels and preeclampsia (PE).

Methods: This observational study used case control design. The population of this study was all pregnant women with singleton pregnancy and 28–42 weeks of gestation who were treated at Department of Obstetrics and Gynecology dr. Mohammad Hoesin General Hospital Palembang from August 2020 to November 2020. The study was divided into 2 groups, a case group of 30 pregnant women with PE and a control group of 60 pregnant women without PE. Serum zinc level examination was performed on all samples which met the study criteria. The data was processed by using SPSS software program version 20.0 Windows.

Results: Both case and control groups had no meaningful differences in the general characteristics of the patient. There were significant differences in the maternal serum of average zinc level in both study groups ($p = 0.013$; $43.90 \pm 15.79 \mu\text{g/dL}$). The level of serum zinc which had the best sensitivity and specificity was $45.5 \mu\text{g/dL}$.

Conclusion: There was a meaningful relationship between serum zinc levels and PE. Pregnant women with serum zinc levels $\leq 45.5 \mu\text{g/dL}$ were significantly 3.2 times more risky towards PE than pregnant women with serum zinc levels $> 45.5 \mu\text{g/dL}$. In this case, it was necessary to give zinc earlier in pregnancy to reduce the risk of preeclampsia.

Keywords: case-control study, preeclampsia, zinc.

Abstrak

Tujuan: Mengetahui hubungan antara kadar seng serum dan kejadian preeklamsia (PE).

Metode: Penelitian observasional ini menggunakan desain kasus kontrol. Populasi penelitian ini adalah seluruh ibu hamil dengan kehamilan tunggal dan usia kehamilan 28–42 minggu. Pasien dirawat di KSM/Bagian Obstetri dan Ginekologi RSUP dr. Mohammad Hoesin Palembang dari Agustus 2020 hingga November 2020. Penelitian dibagi menjadi 2 kelompok, kelompok kasus terdiri atas 30 ibu hamil dengan PE dan kelompok kontrol 60 ibu hamil tanpa PE. Pemeriksaan kadar seng serum dilakukan pada semua sampel yang memenuhi kriteria penelitian. Data diolah dengan menggunakan program software SPSS Windows versi 20.0.

Hasil: Tidak terdapat perbedaan yang bermakna mengenai karakteristik umum pasien antara kelompok kasus dan kontrol. Terdapat perbedaan yang signifikan dalam rata-rata kadar seng serum ibu pada kedua kelompok penelitian ($p = 0,013$; $43,90 \pm 15,79 \text{ g/dL}$). Kadar seng serum yang memiliki sensitivitas dan spesifisitas terbaik adalah $45,5 \text{ g/dL}$.

Kesimpulan: Terdapat hubungan yang bermakna antara kadar seng serum dan PE. Ibu hamil dengan kadar seng serum $\leq 45,5 \mu\text{g/dL}$ secara signifikan berisiko 3,2 kali lebih besar mengalami PE daripada ibu hamil dengan kadar seng serum $> 45,5 \mu\text{g/dL}$. Dalam hal ini, pemberian seng perlu diberikan lebih awal pada kehamilan untuk mengurangi risiko preeklamsia.

Kata kunci: preeklamsia, seng, studi kasus-kontrol