

## Research Article

### Assosiation between Serum Cortisol Levels and Anxiety levels In Elective and Emergency Cesarean Section

Hubungan antara Kortisol Serum dan Tingkat Kecemasan pada Operasi Seksio Sesarea Elektif dan Darurat

Nadia O. S. Nurdin, John J. E. Wantani, R. A. A. Mewengkang

Departement of Obstetrics and Gynecology  
Faculty of Medicine Universitas Sam Ratulangi  
Prof. DR. R. D. Kandou General Hospital  
Manado

#### Abstract

**Objective:** To detect anxiety before elective and emergency cesarean section.

**Methods:** This study was a cross-sectional study. The number of research samples was 42 samples consisting of 21 pregnant patients with an elective cesarean section plan and 21 pregnant patients with an emergency cesarean section at Prof. RSUP. Dr. R. D. Kandou Hospital Manado and Network Hospital in Manado from March 2021 to June 2021. Anxiety was assessed by examining serum cortisol and anxiety levels according to the Hamilton questionnaire (HAM-A). The data were then analyzed using SPSS version 23.0 software.

**Results:** Cortisol levels were higher in emergency cesarean section (mean  $21.590 \pm 11.6392$ ) compared to elective cesarean section (mean  $10.586 \pm 4.9501$ ). Anxiety levels according to HAM-A scores were higher in emergency cesarean section (mean  $15.33 \pm 7.722$ ) compared to elective cesarean section (mean  $7.19 \pm 3.614$ ).

**Conclusion:** There was a significant positive correlation between cortisol levels and anxiety levels based on HAM-A scores.

**Keywords:** cesarean section, cortisol, HAM-A score anxiety.

#### Abstrak

**Tujuan:** Untuk mendeteksi kecemasan sebelum tindakan seksio sesarea elektif dan emergensi.

**Metode:** Penelitian ini merupakan suatu penelitian cross-sectional. Jumlah sampel penelitian 42 sampel terdiri dari 21 pasien hamil dengan rencana seksio sesarea elektif dan 21 pasien hamil dengan rencana seksio sesarea emergensi di RSUP Prof. Dr. R. D. Kandou Manado dan RS Jejaring di Kota Manado dari bulan Maret 2021 sampai bulan Juni 2021. Kecemasan dinilai melalui pemeriksaan kortisol serum dan tingkat kecemasan menurut kusioner Hamilton (HAM-A). Data kemudian dianalisis dengan menggunakan software SPSS versi 23.0.

**Hasil:** Kadar kortisol secara rata-rata lebih tinggi pada seksio sesarea emergensi (mean  $21.590 \pm 11.6392$ ) dibandingkan dengan seksio sesarea elektif (mean  $10.586 \pm 4.9501$ ). Tingkat kecemasan menurut skor HAM-A secara rata-rata lebih tinggi pada seksio sesarea emergensi (mean  $15.33 \pm 7.722$ ) dibandingkan dengan seksio sesarea elektif (mean  $7.19 \pm 3.614$ ).

**Kesimpulan:** Terdapat korelasi positif bermakna antara kadar kortisol dan tingkat kecemasan berdasarkan skor HAM-A pada semua subjek penelitian.

**Kata kunci:** kortisol, seksio sesarea, skor HAM-A. kecemasan.

**Correspondence author.** Nadia O.S. Nurdin. Department of Obstetrics and Gynecology.  
Faculty of Medicine Universitas Sam Ratulangi. Prof.Dr. R.D. Kandou General Hospital Manado  
Email; aichikarai@gmail.com