

Vitamin D Administration Reduces Interleukin 6 (IL-6) Levels In Peritoneal Fluid In Endometrioma Patients

Perbedaan Rerata Kadar Interleukin 6 (IL-6) Pada Cairan Peritoneum Pasca Pemberian Vitamin D Pasien Endometrioma

Singgeh Setyasworo¹, Arufiadi Anityo Mochtar², Erwinanto², Herman Kristanto², Hary Tjahjanto², Yuli Trisetiyono²

¹ Resident of Obstetrics and Gynecology, Faculty of Medicine Diponegoro University / Dr. Kariadi Hospital Semarang, Indonesia

² Department of Obstetrics and Gynecology, Faculty of Medicine Diponegoro University / Dr. Kariadi Hospital Semarang, Indonesia

Institution Address

Faculty of Medicine, Diponegoro University / Dr. Kariadi General Hospital Medical Center
Semarang, Central Java, Indonesia
E-mail: singsetya@gmail.com

Abstract

Background: An endometrioma is a cyst that occurs when endometrial tissue grows on the epithelium of the ovary. Vitamin D is a steroid hormone that can be extracted from commonly available foods and can be synthesized by humans when exposed to sunlight. Vitamin D deficiency has been reported to be associated with various pathologies, including endometriosis. Vitamin D has been reported to have anti-angiogenic effects that may inhibit the growth of endometriotic implants.

Aim: Proving the effect of vitamin D administration on interleukin 6 (IL-6) levels in peritoneal fluid in patients with endometrioma.

Method: Experimental research with design post-test only carried out at the Obstetric- Gynecology Installation of the Central General Hospital (RSUP) Dr. Kariadi Semarang. The research sample was 50 patients. The selection of research subjects will be carried out using consecutive sampling, namely the selection of research subjects based on research criteria and the subjects signing an agreement to participate in the research. Statistical analysis was carried out using the Independent T Test (or Mann-Whitney U) and the Dependent T Test (or Wilcoxon). The correlation test between IL-6 levels and vitamin D levels was carried out using the Spearman Test. Results are significant if $p < 0.05$. Statistical analysis was carried out using SPSS edition 26.

Result: There was no significant relationship between IL-6 levels and initial vitamin D levels ($p=0.467$), final vitamin D levels ($p=0.410$), and Δ vitamin D ($p=0.650$). However, there is a tendency for a negative correlation between IL-6 levels and vitamin D levels, this means that an increase in vitamin D levels will be followed by a decrease in IL-6 levels in research subjects

Conclusion: There was a difference in the mean levels of IL-6 in peritoneal fluid in endometrioma patients who were given vitamin D supplementation and placebo, but the difference was not statistically significant.

Keywords: Endometrioma, interleukin 6, peritoneal fluid, vitamin D

Abstrak

Latar Belakang: Endometrioma adalah kista yang terjadi ketika jaringan endometrium tumbuh pada epitel ovarium. Vitamin D merupakan hormon steroid yang dapat diekstraksi dari makanan yang tersedia secara umum dan dapat disintesis oleh manusia saat terkena sinar matahari. Defisiensi vitamin D dilaporkan berhubungan dengan berbagai patologi, termasuk endometriosis. Vitamin D telah dilaporkan memiliki efek anti-angiogenik yang dapat menghambat pertumbuhan implan endometriotik.

Tujuan: Membuktikan pengaruh pemberian vitamin D terhadap kadar interleukin 6 (IL-6) cairan peritoneum pada pasien endometrioma.

Metode: Penelitian eksperimental dengan desain post-test hanya dilakukan di Instalasi Obstetri-Ginekologi Rumah Sakit Umum Pusat (RSUP) Dr. Kariadi Semarang. Sampel penelitian sebanyak 50 pasien. Pemilihan subjek penelitian akan dilakukan dengan cara konsekutif sampling yaitu pemilihan subjek penelitian berdasarkan kriteria penelitian dan subjek menandatangani perjanjian untuk ikut serta dalam penelitian. Analisis statistik dilakukan dengan menggunakan Uji T Independen (atau Mann-Whitney U) dan Uji T Dependen (atau Wilcoxon). Uji korelasi kadar IL-6 dengan kadar vitamin D dilakukan dengan menggunakan Uji Spearman. Hasil signifikan jika $p < 0,05$. Analisis statistik dilakukan dengan menggunakan SPSS edisi 26.

Hasil: Tidak terdapat hubungan bermakna antara kadar IL-6 dengan kadar vitamin D awal ($p=0,467$), kadar vitamin D akhir ($p=0,410$), dan Δ vitamin D ($p=0,650$). Namun terdapat kecenderungan korelasi negatif antara

kadar IL-6 dengan kadar vitamin D, hal ini berarti peningkatan kadar vitamin D akan diikuti dengan penurunan kadar IL-6 pada subjek penelitian.

Kesimpulan: Terdapat perbedaan rerata kadar IL-6 cairan peritoneum pada pasien endometrioma yang diberikan suplementasi vitamin D dan plasebo, namun perbedaan tersebut tidak bermakna secara statistik.

Kata Kunci: Endometrioma, interleukin 6, cairan peritoneum, vitamin D