

# Low Vitamin D Levels in Endometriosis Cyst Patients Compared to Normal Women and Correlation of Vitamin D Levels with Endometriosis Cyst Size

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## Abstract

**Introduction:** Endometriosis is associated with lipid peroxidation by reactive oxygen species (ROS) which causes endometrial cell DNA damage. Vitamin D is known to have good antioxidant content, so it is thought to have the ability to inhibit proliferation, invasion and production of pro-inflammatory cytokines in endometriosis

**Methods:** Analytical observational study with cross sectional design with 60 samples consisting of 30 endometriosis cyst patients and 30 normal women. Evaluation was carried out on vitamin D levels and endometriosis cyst size. Analysis was carried out using the SPSS 32 edition application. Results are significant if  $p < 0.05$ .

**Results:** Vitamin D levels in the endometriosis group were significantly lower than normal women ( $13.23 \pm 5.39$  ng/mL vs  $15.83 \pm 5.30$  ng/mL;  $p = 0.048$ ). Subjects with vitamin D levels  $< 13.45$  had a 1.97x (PR 1.97; CI95% 1.14-3.39) higher risk of experiencing endometriosis compared to subjects with vitamin D levels  $> 13.45$  ng/mL. There was no correlation between vitamin D levels and the size of endometriosis cysts ( $p = 0.720$ ).

**Conclusion:** Assessment of vitamin D levels in patients with complaints of dysmenorrhea, dyspareunia, dysuria, chronic pelvic pain or dyschezia can be used to screen for the diagnosis of endometriosis cysts.

**Keywords:** *endometriosis, endometriosis cyst size, vitamin D*

## Abstrak

**Pendahuluan:** Endometriosis dikaitkan dengan peroksidasi lipid oleh *reactive oxygen species* (ROS) yang menyebabkan kerusakan DNA sel endometrium. Vitamin D dikenal memiliki kandungan antioksidan yang baik sehingga diduga memiliki kemampuan menghambat proliferasi, invasi, dan produksi sitokin pro-inflamasi pada endometriosis.

**Metode:** Penelitian observasional analitik desain *cross sectional* dengan 60 sampel terdiri dari 30 pasien kista endometriosis dan 30 perempuan normal. Evaluasi dilakukan pada kadar vitamin D dan ukuran kista endometriosis. Analisis dilakukan menggunakan aplikasi SPSS edisi 32. Hasil signifikan apabila  $p < 0.05$ .

**Hasil:** Kadar vitamin D pada kelompok endometriosis secara signifikan lebih rendah dibandingkan perempuan normal ( $13,23 \pm 5,39$  ng/mL vs  $15,83 \pm 5,30$  ng/mL;  $p = 0,048$ ). Subjek dengan kadar vitamin D  $< 13,45$  beresiko 1,97x (PR 1,97; CI95% 1,14-3,39) lebih tinggi untuk mengalami endometriosis dibandingkan subjek dengan kadar vitamin D  $> 13,45$  ng/mL. Tidak terdapat korelasi antara kadar vitamin D terhadap ukuran kista endometriosis ( $p = 0,720$ ).

**Kesimpulan:** Penilaian kadar vitamin D pada pasien dengan keluhan dysmenorrhea, dyspareunia, dysuria, nyeri panggul kronis atau dyschezia dapat digunakan untuk *screening* diagnosis kista endometriosis.

**Kata kunci:** *endometriosis, ukuran kista endometriosis, vitamin D*