

**PERBEDAAN KADAR RESEPTOR VITAMIN D ANTARA WANITA  
DENGAN INFERTILITAS PRIMER DAN WANITA  
TANPA INFERTILITAS**

**TESIS**



**PROGRAM PENDIDIKAN DOKTER SPESIALIS OBSTETRI DAN GINEKOLOGI  
FAKULTAS KEDOKTERAN UNIVERSITAS ANDALAS  
RSUP DR. M. DJAMIL  
PADANG  
2024**

## ABSTRAK

### PERBEDAAN KADAR RESEPTOR VITAMIN D ANTARA WANITA DENGAN INFERTILITAS PRIMER DAN WANITA TANPA INFERTILITAS

<sup>1</sup>Shreshta Dewi, <sup>2</sup>Haviz Yuad, <sup>3</sup>Husna Yetti

<sup>1</sup>Departemen Obstetri dan Ginekologi, Fakultas Kedokteran Universitas Andalas/RSUP Dr. M.Djamil, Padang

<sup>2</sup>Subbagian Fertilitas Endokrinologi Reproduksi, Departemen Obstetri dan Ginekologi, Fakultas Kedokteran Universitas Andalas/RSUP Dr. M.Djamil, Padang

<sup>3</sup>Departemen Ilmu Kesehatan Masyarakat – Kedokteran Komunitas, Fakultas Kedokteran Universitas Andalas

**Pendahuluan :** Reseptor vitamin D (VDR) diekspresikan secara luas dalam sistem reproduksi wanita, termasuk ovarium, endometrium, sel epitel falopi, desidua, dan plasenta, yang menandakan adanya peran vitamin D pada fisiologi sistem reproduksi. Penelitian mengenai vitamin D telah banyak dilakukan namun mengenai VDR dan infertilitas masih jarang, padahal VDR memiliki peran penting dalam terbentuknya aksi vitamin D

**Tujuan :** Mengetahui perbedaan kadar reseptor vitamin D antara subjek wanita infertilitas primer dan subjek wanita tanpa gangguan fertilitas

**Metode :** Penelitian ini merupakan studi case control pada wanita dengan infertilitas dan wanita tanpa gangguan fertilitas di Kota Padang yang dilakukan sejak Maret 2023 – Januari 2024. Kadar VDR serum (ng/ml) diukur dengan mengambil sampel darah vena yang diperiksa dengan metode *ELISA* di Laboratorium Biomedik Fakultas Kedokteran Universitas Andalas. Perbedaan kadar VDR dihitung dengan uji T independent.

**Hasil:** Terdapat sebanyak 60 subjek yang terbagi menjadi 30 subjek infertilitas dan 30 subjek tanpa gangguan fertilitas. Subjek infertilitas primer memiliki lebih banyak kelompok usia 31-35 tahun dan >35 tahun (54,8% dan 66,7%), lebih banyak IMT *overweight* dan obesitas (50% dan 83,3%) dan mengalami infertilitas 14 tahun (73,3%). Rerata kadar VDR pada subjek infertilitas lebih rendah dibandingkan pada subjek tanpa gangguan fertilitas yaitu  $1,73 \pm 0,92$  ng/ml dan  $2,35 \pm 1,30$  ng/ml secara berturut-turut dimana perbedaan ini signifikan secara statistik ( $p=0,036$ ).

**Kesimpulan :** Kadar VDR serum pada pasien infertilitas primer ditemukan lebih rendah daripada subjek tanpa gangguan fertilitas dimana hal ini menandakan adanya pengaruh dari kadar VDR terhadap kejadian infertilitas primer.

**Kata Kunci :** reseptor, vitamin D, infertilitas

## ABSTRACT

### THE RELATIONSHIP VITAMIN D RECEPTOR LEVEL BETWEEN INFERTILITY AND FERTILITY WOMAN

<sup>1</sup>Shreshta Dewi, <sup>2</sup>Haviz Yuad, <sup>3</sup>Husna Yetti

<sup>1</sup>Department of Obstetrics and Gynecology, Faculty of Medicine, Andalas University/ Dr. M. Djamil Hospital, Padang

<sup>2</sup>Division of Fertility Reproductive Endocrinology, Department of Obstetrics and Gynecology, Faculty of Medicine, Andalas University/ Dr. M. Djamil Hospital, Padang

<sup>3</sup>Department of Public Health– Community Medicine, Faculty of Medicine, Andalas University

**Introduction :** Vitamin D receptor (VDR) is widely expressed in female reproductive system, including ovaries, endometrium, fallopian epithelial cells, decidua, and placenta, which indicates a role for vitamin D in the physiology of the reproductive system. Many study has been done on vitamin D, but there is still lack of data regarding VDR level and infertility, whereas VDR has an important role in the action of vitamin D

**Objective:** To determine the differences in VDR levels between women with primary infertility and woman without fertility problems.

**Method:** This is a case control study on women with and without fertility problems in Padang City which was conducted from March 2023 – January 2024. Serum VDR levels (ng/ml) were measured by taking venous blood samples which were examined using the ELISA method in the Biomedicine Laboratory at Faculty of Medicine, Andalas University. Differences in VDR levels were calculated using the independent T test.

**Results:** There were 60 subjects divided into 30 subjects with infertility and 30 subjects without fertility problems. Subjects with primary infertility had more 31-35 years and >35 years old patients (54.8% and 66.7%), more overweight and obese BMIs patients (50% and 83.3%) and had experienced infertility for 1-4 years (73.3%). The mean VDR levels in infertility subjects were lower than subjects without fertility problems ( $1.73 \pm 0.92$  ng/ml and  $2.35 \pm 1.30$  ng/ml respectively) where this difference was statistically significant ( $p=0.036$ ).

**Conclusion:** Serum VDR levels in primary infertility patients were found to be lower than in subjects without fertility problems, which indicates the influence of the VDR levels on the incidence of primary infertility.

**Keywords:** receptors, vitamin D, infertility