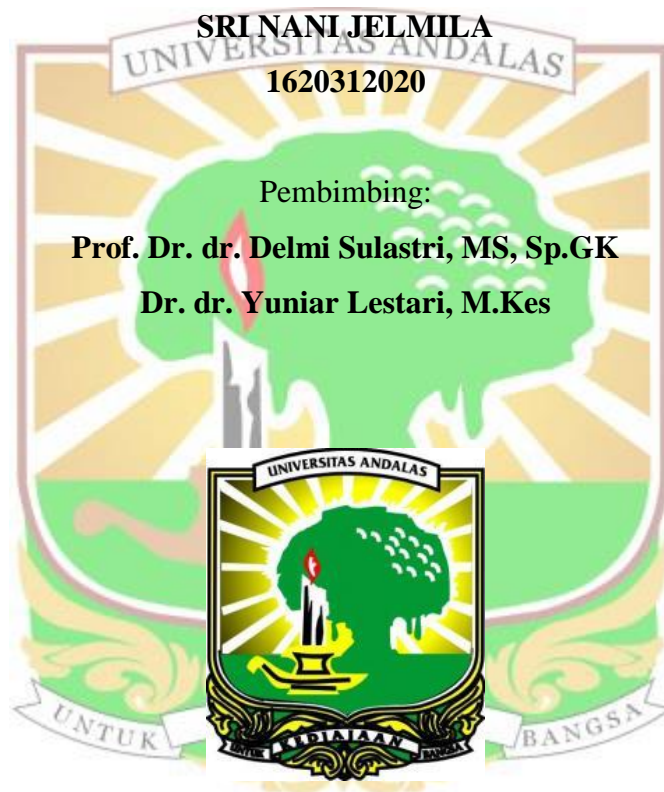


**HUBUNGAN ASUPAN VITAMIN D DAN KADAR  
25-HIDROKSI VITAMIN D SERUM DENGAN PANJANG TELOMER  
PEREMPUAN PREMENOPAUSE ETNIK MINANGKABAU  
DI KOTA PADANG**

**TESIS**



**PROGRAM MAGISTER ILMU BIOMEDIK  
PASCASARJANA FAKULTAS KEDOKTERAN  
UNIVERSITAS ANDALAS  
PADANG  
2019**

**HUBUNGAN ASUPAN VITAMIN D DAN KADAR 25-HIDROKSI  
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**Abstrak**

Penuaan berhubungan dengan peningkatan prevalensi penyakit tidak menular. Premenopause merupakan fase dalam penuaan yang ditandai dengan berkurangnya fungsi biologis sel. Penuaan dapat diukur dengan biomarker sel yaitu telomer. Panjang telomer dapat dipengaruhi oleh berbagai faktor diantaranya vitamin D. Vitamin D berperan sebagai anti proliferasi dan anti inflamasi sel. Penelitian ini bertujuan untuk mengetahui hubungan asupan vitamin D dan kadar 25-hidroksi vitamin D serum dengan panjang telomer perempuan premenopause etnik Minangkabau di kota Padang.

Penelitian ini merupakan penelitian *cross sectional* terhadap 93 perempuan premenopause etnik Minangkabau di kota Padang. Pengambilan sampel dilakukan dengan teknik *multistage random sampling*. Asupan vitamin D diukur dengan menggunakan metode *Food Frequency Questionnaire* (FFQ). Kadar 25-hidroksi vitamin D serum diukur dengan metode ELISA. Panjang telomer diukur dengan qPCR menggunakan metode O'Challagan & Fennech. Analisis dilakukan secara univariat dan bivariat dengan korelasi *Pearson*.

Hasil penelitian didapatkan rerata asupan vitamin D  $5,36 \pm 1,82$   $\mu\text{g/hari}$ . Rerata kadar 25-hidroksi vitamin D serum  $27,79 \pm 1,38$  ng/ml. Rerata panjang telomer  $474,13 \pm 2,02$ . Tidak terdapat hubungan antara asupan vitamin D dengan panjang telomer ( $r = -0,157$ ,  $p = 0,133$ ). Terdapat hubungan antara kadar 25-hidroksi vitamin D serum dengan panjang telomer ( $r = 0,267$ ,  $p = 0,01$ ).

Kesimpulan hasil penelitian ini adalah terdapat hubungan kadar 25-hidroksi vitamin D serum dengan panjang telomer perempuan premenopause etnik Minangkabau di kota Padang. Kenaikan 1 ng/ml kadar 25-hidroksi vitamin D serum memperlambat pemendekan telomer 0,583 bp.

**Kata kunci** : Vitamin D, Telomer, Premenopause, Minangkabau

**CORRELATION BETWEEN VITAMIN D INTAKE AND**

## 25-HYDROXY VITAMIN D SERUM LEVELS WITH TELOMERE LENGTH OF MINANGKABAU PREMENOPAUSAL WOMEN IN PADANG CITY

### Abstract

Aging is associated with an increased prevalence of non communicable diseases. Premenopause is a phase in aging characterized by reduced of biological functions of cells. Aging can be measured by cell biomarker, namely telomeres. Telomere length can be influenced by various factors including vitamin D. Vitamin D acts as an anti proliferation and anti inflammatory cell. The aim of this study was to examine the relationship between vitamin D intake and 25-hydroxy vitamin D serum levels with telomere length of Minangkabau premenopausal women in Padang city.

This study was a cross sectional study of 93 Minangkabau premenopausal women in Padang city. Sampling was done by multistage random sampling technique . Vitamin D intake was measured by the Food Frequency Questionnaire (FFQ) method. 25-hydroxy vitamin D serum levels were measured by the ELISA method. Telomeres length were measured by qPCR using O'Challagan & Fennech method. The analysis was carried out by univariate and bivariate with Pearson correlation .

The results showed that the average of vitamin D intake was  $5,36 \pm 1,82$   $\mu\text{g/day}$ . The mean serum 25-hydroxy vitamin D levels was  $27,79 \pm 1,38$   $\text{ng/ml}$ . the average of telomere length was  $474,13 \pm 2,02$  bp. There was no correlation between vitamin D intake and telomere length ( $r = - 0.157$ ,  $p = 0.133$ ). There was a correlation between 25-hydroxy vitamin D serum levels with telomere length ( $r = 0.267$ ,  $p = 0.01$ ).

The conclusion of this study was that there was a correlation between 25-hydroxy vitamin D serum levels with telomere length of Minangkabau premenopausal women in Padang city. An increased of 1  $\text{ng/ml}$  25-hydroxy vitamin D serum levels slowed down telomere shortening 0,583 bp.

**Keywords** : *Vitamin D, Telomere, Premenopause, Minangkabau*