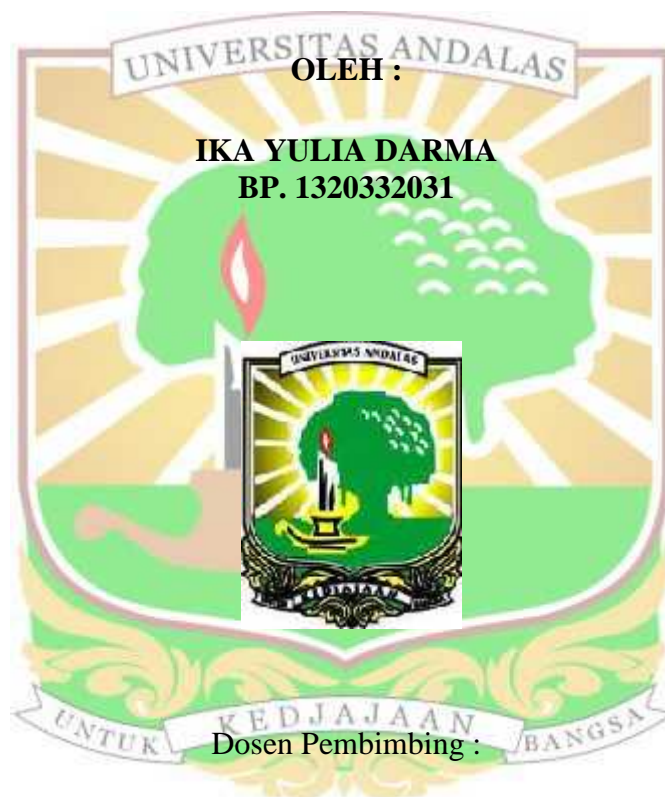


**HUBUNGAN KADAR VITAMIN C DAN MATRIX  
METALLOPROTEINASE -2 SERUM DENGAN KETUBAN  
PECAH DINI DAN KEHAMILAN NORMAL**

**TESIS**



- 1. Dr. Arni Amir, MS**
- 2. Dr. dr. Vaulinne Basyir, Sp.OG (K)**

**PROGRAM STUDI S2 ILMU KEBIDANAN  
PASCASARJANA FAKULTAS KEDOKTERAN  
UNIVERSITAS ANDALAS  
PADANG  
2018**

## ABSTRAK

### HUBUNGAN KADAR VITAMIN C DAN *MATRIX METALLOPROTEINASE-2* SERUM DENGAN KETUBAN PECAH DINI DAN KEHAMILAN NORMAL

Ika Yulia Darma, Arni Amir, Vaulinne Basyir

Ketuban pecah dini adalah masalah penting dalam obstetri dengan insiden 8 % pada kehamilan. Kejadian KPD disebabkan oleh multifaktorial, diantaranya adalah faktor infeksi dan nutrisi ibu hamil yang mempengaruhi pembentukan selaput ketuban. Beberapa peneliti menemukan bahwa peningkatan *matrix metalloproteinase-2* akan mendegradasi matrix ekstraseluler, sedangkan penurunan kadar vitamin C menyebabkan serat kolagen menjadi lemah sehingga memicu terjadinya KPD. Tujuan penelitian untuk mengetahui hubungan kadar vitamin C dan MMP-2 serum dengan ketuban pecah dini dan kehamilan normal.

Penelitian dilakukan dengan menggunakan desain *cross sectional comparative study*. Penelitian dilakukan pada empat rumah sakit di Padang pada bulan September – Oktober 2017. Pengambilan sampel dengan *consecutive sampling*. Populasi pada penelitian ini adalah ibu hamil dengan diagnosa ketuban pecah dini (n=29) dan seluruh wanita dengan kehamilan normal(n=29). Pemeriksaan kadar vitamin C dan MMP-2 dilakukan dengan metode ELISA. Uji statistik menggunakan uji t tidak berpasangan dan korelasi Pearson.

Hasil penelitian menunjukkan rerata kadar vitamin C pada ketuban pecah dini yaitu  $0.53 \pm 0.09$  mg/dl, dan pada kehamilan normal  $0.58 \pm 0.08$  mg/dl ( $p < 0,05$ ). Rerata kadar MMP-2 pada KPD yaitu  $35,17 \pm 2,23$  ng/ml, dan pada kehamilan normal  $33,27 \pm 0,82$  ng/ml ( $p < 0,05$ ). Tidak terdapat hubungan kadar vitamin C dan MMP-2 dengan ketuban pecah dini dan kehamilan normal ( $r = -0.196, p = 0,308$  ;  $r = 0,067$  ;  $p = 0,731$ , berturut-turut).

Kesimpulan penelitian terdapat perbedaan rerata kadar vitamin C dan MMP-2 pada ketuban pecah dini dan kehamilan normal. Namun tidak terdapat hubungan kadar vitamin C dan MMP-2 pada ketuban pecah dini dan kehamilan normal.

**Kata Kunci** : ketuban pecah dini, *matrix metalloproteinase-2*, vitamin C

## ABSTRACT

### THE RELATIONSHIP VITAMIN C LEVEL AND MATRIX METALLOPROTEINASE -2 SERUM WITH PREMATURE RUPTURE OF MEMBRANES AND NORMAL PREGNANCY

Ika Yulia Darma, Arni Amir, Vaulinne Basyir

Premature rupture of membranes (PROM) an important problem in obstetrics, with incidence around 8% in pregnancy. PROM is caused by multiple factors, including infection and nutrition of pregnant women that affect the elasticity of membranes. Some studies have found that increased level of matrix metalloproteinase (MMP)-2 would degrade extracellular matrix, while decreased level of vitamin C would weaken collagen fibers that may lead to the occurrence of PROM. The aim of this study was to investigate maternal serum vitamin C and MMP -2 levels in relation to PROM and normal pregnancy.

This study employed cross sectional comparative study design. Subject were recruited from four hospitals in Padang, during September - October 2017, by consecutive sampling. The population in this study were pregnant women with early rupture of membranes (n=29) and normal pregnancy (n=29). Serum vitamin C dan MMP-2 levels were measured by ELISA. Statistical analysis was performed by using independent sample t - test and Pearson correlation.

The results showed that mean level of vitamin C in PROM was  $0.53 \pm 0.09$  mg/dl and in normal pregnancy was  $0.58 \pm 0.08$  mg/dl ( $p < 0.05$ ). The mean level of MMP-2 in PROM was  $35.17 \pm 2.23$  ng/ml and in normal pregnancy was  $33.27 \pm 0.82$  ng/ml ( $p < 0.05$ ). There was no observed associaton between serum vitamin C and MMP-2 levels with PROM and normal pregnancy ( $r = -0.196$ ,  $p = 0,308$  ;  $r = 0,067$  ;  $p = 0,731$ , respectively).

It is concluded that there were mean differences of vitamin C and MMP-2 levels in PROM and normal pregnancy. However, there were no relationship between vitamin C and MMP-2 levels with PROM and normal pregnancy.

**Keywords** : matrix metalloproteinase-2, premature rupture of membranes, vitamin C