

# Obstetrical and Non-Obstetrical Factors Toward Uterine Prolapse Occurrence in Ulin General Hospital Banjarmasin on Januari - December 201

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## OBSTETRICAL AND NON-OBSTETRICAL FACTORS TOWARD UTERINE PROLAPSE OCCURRENCE IN ULIN GENERAL HOSPITAL BANJARMASIN ON JANUARI – DECEMBER 2017

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**Abstract:** Uterine prolapse is a gynecological disease in women that emerge patients physically and psychologically. Uterine prolapse is defined as an uterus herniation inside or outside vagina as the result of the ligament and fascia failure that retain the uterus in its actual place. This research was to identify obstetrical and non-obstetrical factors in uterine prolapses occurrence in Ulin General Hospital Banjarmasin on period January until December 2017 using case control approach. The total sample was 80 medical record samples, which divided into 40 medical record samples of patient with uterine prolapse and 40 medical record samples of patient without the occurrence of uterine prolapse. The results using chi square analysis obtained non-obstetrical factors: age >60 years old (*OR* 6.67: 95%*CI* 2.44-18.21), BMI  $\geq$  30 (*OR* 3.10: 95%*CI* 1.24-7.71), menopause (*OR* 21.00: 95%*CI* 6.11-72.18); and non-obstetrical factors: parity >4 / multiparity (*OR* 13.78: 95%*CI* 4.71-40.28), macrosomia (*OR* 7.15: 95%*CI* 2.65-19.34), vaginal delivery (*OR* 28.78: 95%*CI* 7.41-111.79). The results of logistic regression obtained non-obstetrical factors: age  $\geq$  60th (*Exp B* 4.21 and sig. 0.004), menopause (*Exp B* 1.12 and sig. 0.001), and multiparity (*Exp B* 2.35 and sig. 0.016). The results of this analysis obtained that obstetrical and non-obstetrical factors were related to uterine prolapse occurrence, and the dominant factor was age > 60 years old, so it could be concluded that there was significant factor between obstetrical and non-obstetrical factors on uterine prolapse occurrence in Ulin General Hospital Banjarmasin.

**Keywords:** uterine prolapse, obstetrical factor, non-obstetrical factor

## INTRODUCTION

Every pregnant woman who will give birth has many risks from disability to death. There are some pregnant woman who deliver normally has some disability risks such as pelvic floor organ disability. One of chronic complications that can occur is uterine prolapse. The causes of uterine prolapse have not defined accurately until now.

A study in America on Women's Health Initiative (WHI), there were 50-79 years old women or around 41% had pelvic organ prolapse (POP) which was for the first place was cystocele for 34% and followed by uterine prolapse for 14%. Other research in America involved 149.554 women also has obtained 11% of them had uterine prolapse. From 412 women registered in WHI research has followed up to be rated the prolapse progress. Spontaneous regression is a common thing in uterine prolapse, especially for prolapse grade I with progress level 1,9 per 100 women/year, while regression level is 48 per 100 women/year.<sup>1</sup>

A study from Oxford Family Planning Association in Great Britain studied 17.000 women in the age of 25 to 39,5 years old resulted some annual incidents of women hospitalized for uterine prolapse around 20,5 per 10.000; and annual incidents for uterine prolapse surgery were around 16,2 per 10.000 incidents. Some countries has different amount of uterine prolapse incidence. D'Gynecologie et Obstetrique Clinic in Geneva has 5,7% prevalence for uterine prolapse incidents. The incidents in other countries such as Hamburg is 5,4%, Rome has 6,7% incidents, and eastern countries such as Egypt, Japan, and India are reported to have high uterine prolapse incidence but the rate has not been reported.<sup>1</sup>

In 2005 to 2006, National Health and Nutrition Examination Survey (NHANES) kohort, Pelvic Floor Disorders Network

(PFDN) decided the prevalence of pelvic organ prolapse among women in age 20-90 as 1,6%. Next, Smith et al documented surgery incidence for the first time toward pelvic organ prolapse in women under 30 years old became 0,03-1,44%.<sup>2</sup>

In Indonesia, prolapse case has been reported only around 1,5% and often occurs in woman with more than once deliveries history. Besides that, it is founded in woman with heavy physical working load and woman in older age. Dr. Pringadi Hospital in Medan reports that 63 cases of uterine prolapse from 5.372 gynecology cases in that hospital. From the 63 cases, around 69% of them are woman in the age of > 40 years old. In addition, most cases are also found in women with pregnancies that are more than 5 or often referred to as grande multipara in the menopause phase; and also found in women that have job as farmers. Uterine prolapse rarely found in woman who has not been pregnant and giving birth.<sup>3</sup>

Pelvic organ prolapse (POP) is defined as a lower organ shifting that cause organ herniation inside or through vagina (uterovaginal prolapse). Uterine prolapse is uterus herniation inside or outside vagina as the results of ligament and fascia failure in retaining uterus position in its actual place. Uterine prolapse has multifactorial etiology and until now it have not explained well. Age become risk factor in uterine prolapse and the risk will doubled in each live decade. Parity increasing also associated in the increase of prolapse severity. From 17.000 women in Oxford family planning study they has two vaginal delivery records which is 8,4 times more likely to experience surgery for prolapse than those who does not have the record.<sup>1,4</sup>

Based on a research done by Hardianti (2015) stated that woman with overweight (BMI 25-30) or obesity (>30) is in the high risk of developing uterine prolapse.

Heredity or genetic factor also has role. The higher risk of uterine prolapse also show in woman whom her mother or sister has prolapse. Menopause is also known as the risk factor of POP; on the other hand a research with 270 women that had hysterectomy taken from WHI experiment cannot find any correlation between estrogen status (the using of hormone replacement) and uterine prolapse.<sup>3,4</sup>

There are many symptoms associated to uterine prolapse and the most specific symptom is seeing or feeling a lump on vagina. Those symptoms are divided into symptom in vagina, urinary system, digestive system, and sexual. The most specific symptom in vagina is the sensation of a lump coming out of vagina. The other symptoms are such as urine incontinence, flatus incontinence, sore, and less sensation in sexual intercourse.<sup>4,5</sup>

Uterine prolapse happens to women in every age, but mostly happens in elderly women. The country with higher life expectancy has the possibility for prolapse incidence increased. Those things become necessary to find the factors caused uterine prolapse, so that incidence rate can be minimized. From those reasons, the research about obstetrical and non-obstetrical factor in occurrence of uterine prolapse needs to be conducted.

#### **RESEARCH METHOD**

The research was conducted in Ulin General Hospital Banjarmasin in January to December 2017. This research used case control with outpatients in Obstetrics and Gynecology Polyclinic at Ulin General

Hospital Banjarmasin in January to December 2017 as its population.

Case group was uterine prolapse patients with obstetrical risk factors (parity, macrosomia, and vaginal delivery), and non-obstetrical risk factors (age, BMI, and menopause) that take roles in uterine prolapse incidents. The inclusion criteria was complete and clear medical record of uterine prolapse patients and the exclusion criteria was uterine prolapse patients with other additional diagnosis that can influence the incidence of uterine prolapse such as severity, congenital abnormalities, and pregnant uterine prolapse patients. Another exclusion criteria was incomplete and unclear medical records. Control group was the patients diagnosed uterine prolapse without obstetrical risk factors (parity, macrosomia, and vaginal delivery), and non-obstetrical risk factors (age, BMI, and menopause) with complete and clear medical records.

There were 80 medical records samples, divided into 40 medical record samples of patient with uterine prolapse and 40 medical record samples of patient without the incidence of uterine prolapse.

The obtained data was processed in computer and analyzed using chi square bivariate and logistic regression multivariate.

#### **RESULT AND DISCUSSION**

The characteristics of research samples can be seen in table 1; the relations among risk factor variables is in table 2; and the most effected of risk factor variables is in table 3.

Table 1. The characteristics of research samples

Subject Characteristic	Amount	%
Uterine prolapse		
Yes	40	50
No	40	50
Non-obstetrical factor		
Age (years)		
≥ 60	37	41.25
< 60	43	58.75
BMI		
≥ 30	41	51.25
< 30	39	48.75
Menopause		
Yes	50	62.5
No	30	37.5
Obstetrical factor		
Parity		
Primiparity	41	51.25
Multiparity (≥ 4)	39	48.75
Makrosomia		
> 4000gr	46	57.5
< 4000gr	34	42.5
Vaginal delivery		
Yes	51	63.75
No	29	36.25

Correlations of obstetrical and non-obstetrical variable factors toward the incidence of uterine prolapse can be seen

in table 2, that was bivariate analysis using chi square with significance level  $p < 0,05$ .

Table 2. The incidents of uterine prolapse based on research sample characteristics.

Variable	Uterine Prolapse		Uterine Prolapse Percentage	OR (95% CI)	Sig.
	Yes	No			
Non-obstetrical factor					
Age (years)					
≥ 60	25	8	75.7	6.67 (2.440-18.212)	0.000
< 60	15	32	31.9	1	
BMI					
≥ 30	26	15	63.4	3.10 (1.243-7.706)	0.014
< 30	14	25	35.8	1	
Menopause					
Yes	36	12	75	21.00 (6.110-72.181)	0.000
No	4	28	12.5	1	
Obstetrical Factor					
Parity					
Multiparity (≥ 4)	31	8	79.4	13.78 (4.713-40.281)	0.000
Primiparity	9	32	21.9	1	
Makrosomia					
> 4000gr	27	13	67.5	7.15 (2.647-19.335)	0.000
< 4000gr	9	31	22.5	1	
Vaginal delivery					
Yes	37	3	92.5	28.78 (7.408-111.795)	0.000
No	12	28	30	1	

This research showed that mostly obstetrical and non-obstetrical variable factors correlated to uterine prolapse incidence, although there were some variables from non-obstetrical factors significantly uncorrelated to the incidents. All of the correlations of obstetrical and non-obstetrical variable factors would be discussed separately.

The analysis result showed significant relation between non-obstetrical factors and uterine prolapse incidence. Nitin Joseph research stated at age  $\geq 60$  years old had the bigger risk for uterine prolapse than the younger age supports this result. Based on the theory, the age  $\geq 60$  years old was the risk factor of uterine prolapse, which connected with the reduced of collagen tissue as long as they are getting older. So, the older age decreased collagen tissue that caused the increasing of pelvic prolapse incidence.<sup>6</sup>

In the analysis between BMI non-obstetrical factor and uterine prolapse incidents, they had significant correlations. It showed that BMI  $\geq 30$  had three times influence in causing uterine prolapse than BMI  $< 30$ . BMI  $\geq 30$  showed that a person had overweight or it can be called as obesity. This was supported by a research from Ayus Giri et al, obtained that obesity (BMI  $\geq 30$ ) had uterine prolapse risk than non-obesity (BMI  $< 30$ ). There are many bad effects of obesity in body, one of them is causing pelvic muscles have heavy load so that the muscles on pelvic floor would be getting weaker and causes uterine prolapse.<sup>7,8</sup>

The significant correlations between menopause for non-obstetrical factor and uterine prolapse incidence also obtained in this research. Table 2 shows them who have been menopause had risk factor for 21 times in getting uterine prolapse than who have not. This result is supported by a research from Diana Vale et al in 2005 – 2016, stated that menopause related to uterine prolapse incidence. Menopause is the cessation of menstruation, which

usually happens in 40 years old woman. Menopause causes decreasing until the disappearance of ovarian function that leads to the decreasing of hormone production in ovarian, which one of them is estrogen. The decreasing of estrogen level will cause the lowering of collagen tissue, which leads to weakening of muscles, such as pelvic muscles.<sup>9,10</sup>

In this research, multiparity obstetrical factor was also one of related factors in uterine prolapse incidence. Table 2 shows women with multiparity have 13 times risk factor in uterine prolapse incidence than primiparity. This result goes along with a research from Azimatul in 2012. It stated that multiparity had risk 40 times higher than primiparity in uterine prolapse incidence. WHO Population Report reported that the more women giving birth, the incidents of uterine prolapse will increase. It can be concluded that the parity numbers (multiparity  $\geq 4$ ) is directly proportional to the increase in the incidence of uterine prolapse.<sup>11</sup>

There was significant correlation in macrosomia ( $\geq 4000$  gram) obstetrical factor analysis in the incidence of uterine prolapse. Table 2 shows the women who gave birth to a newborn baby in weigh more than 4000 gram have seven time chances to have uterine prolapse. This result was different with Eldo's research that resulted  $\geq 3000$  gram newborn did not relate to uterine prolapse incidence. The contrasted results can be caused by the difference of macrosomia limitation; in which this research used 4000 gram limit of macrosomia, while Eldo's used 3000 gram as the limit. Based on the present theory, in the occurrence of macrosomia (newborn with more than 4000 gram in weigh) resulted the excessive of muscles stretching so that after labor pelvic muscles becomes weaker than before; or than the newborn with less than 4000 gram in weigh.<sup>12,13</sup>

The result of the last analysis was vaginal delivery in obstetrical factor

related significantly to the incidence of uterine prolapse. Vaginal delivery has big impact to the incidence of uterine prolapse according to the obtained data that each woman who had vaginal delivery has risk for 28 times in getting uterine prolapse than woman who did not have vaginal delivery. This result went along with Trutnovsky research which showed vaginal delivery gave multiple result in uterine prolapse incidence. Based on the theory, until today, vaginal delivery still becomes the main cause of uterine prolapse incidence. This is because in

vaginal delivery process there is damage on some muscles such as levator ani musculus, fascia, and urogenital diaphragm which known as the foundation of uterus; so if there is damages in those areas will cause uterine prolapse incidence in the future.<sup>14</sup>

The bivariate analysis using chi-square obtained that all of analysis in obstetrical and non-obstetrical factor variables fulfilled requirement in continuing to multivariate using logistic regression, showed in table 3.

Tabel 3. The Correlaton of all variables to the incidence of uterine prolapse.

Variable	Exp(B) (95% CI)	Sig.
Non-obstetrical Factors		
Age ≥ 60 y.o	4.21 (1.433-19.8633)	0.004
BMI ≥ 30	2.97 (1.386-17.871)	0.069
Menopause	1.12 (0.021-3.285)	0.001
Obstetrical Factors		
Multiparity (≥ 4)	2.35 (0.113-8.443)	0.016
Macrosomia ≥ 4000gr	2.19 (0.154-7.657)	0.068
Vaginal delivery	1.26 (0.018-6.386)	0.414
Constant	14.86	0.012

Multivariate analysis using logistic regression showed from all factors obtained the most impacting factors in the incidence of uterine prolapse were age ≥ 60 years old (Exp B 4.21 and sig. 0.004), menopause (Exp B 1.12 and sig. 0.001), and multiparity (Exp B 2.35 and sig. 0.016). From those results, it was obtained that age was the most dominant factor in uterine prolapse incidence with Exp B = 4.21, which meant four times risk in causing uterine prolapse incidence than the other factors. This result was supported by Nitin's research in 2015, which stated that age ≥ 60 years old was the most impacting factor in uterine prolapse.

### CONCLUSION

This research concluded that there was no correlation among variable of obstetrical factors: multiparity for ≥ 4 times, macrosomia ≥ 4000 gram, vaginal delivery; and non-obstetrical factor: age ≥

60 years old, BMI, and menopause to the incidences of uterine prolapse in Ulin General Hospital Banjarmasin. From all of variables, there were three most impacting uterine prolapse incidences in Ulin General Hospital Banjarmasin they were age ≥ 60 years old, menopause, and multiparity.

The incidences of uterine prolapse become more intense and more distracting for its patients activity nowadays. From that reason, a much larger scale of continuing research about in obstetrical and non-obstetrical factor in the incidences of uterine prolapse as the prevention or reducing the numbers of uterine prolapse incidences.

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