

## ORIGINAL ARTICLE

# Risk Factors of Uterine Prolapse in Dr. Soetomo General Academic Hospital, Surabaya

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## ABSTRACT

**Introduction:** Uterine prolapse can occur due to the failure of the ligamentous and fascial supports of the uterus. It causes inconvenience to the patients because of genital tract dysfunction and decrease the quality of life. The risk factors are multifactorial. Advancing age, increasing parity, vaginal delivery, and menopause is associated with the uterine risk factors. The aim of this study is to describe the stage, treatment, age, parity, vaginal delivery, and menopause status of women with uterine prolapse in Dr. Soetomo General Academic Hospital, Surabaya.

**Methods:** This research is a descriptive study. The sample is included all women with complaints of uterine prolapse diagnosed and treated at Dr. Soetomo General Academic Hospital, Surabaya from January – December 2017. Statistical was analysed descriptively.

**Results:** From total 82 patients of uterine prolapse in Gynecology Outpatient Clinic Dr. Soetomo General Academic Hospital, Surabaya in 2017, most of the uterine prolapse patients were older than 65 years old (45.1%) and multiparous (62.2%). More than half of the patients (61%) have had more than three vaginal deliveries and have gone through menopause (91.5%). Stage IV prolapse, 33 cases (40.2%) has the highest percentage. Mostly, 47 cases (57.3%) received conservative treatment.

**Conclusion:** Uterine prolapse is most likely to be found in women with older age, came from those in the age group of >65 years old. The incidence of uterine prolapse might increase in multiparous women, have more than three vaginal deliveries, and have gone through menopause. Most of them are on stage IV and received conservative treatment. It is important for women to be educated about uterine prolapse risk factors as an uterine prolapse prevention.

## Introduction

Uterine prolapse is the herniation of the uterus into or beyond the vagina as a result of failure of the ligamentous and fascial supports.<sup>1</sup> Uterine prolapse, one of pelvic organ prolapse, affects millions of women worldwide. It is a common condition that can lead to genital tract dysfunction and disturbed quality of life. Uterine prolapse is a major health issue for women, as shown by the 11.1% lifetime risk of undergoing a single operation for pelvic organ prolapse.<sup>2</sup> The incidence of hospital admission with prolapse was 2.04 per 1000 person years of risk.<sup>3</sup> In Women's Health Initiative study, in the 16,616 women, the rate of uterine prolapse was 14.2%, cystocele was 34.3%, and rectocele was 18.6%.<sup>4</sup> In the United Kingdom, the disorder accounts for 20% of women waiting for major gynecological surgery.<sup>5</sup> The etiology of uterine prolapse is multifactorial. Many risk factors for uterine prolapse have been suggested, advancing age and vaginal childbirth are the most consistent risk factors. Vaginal delivery, hysterectomy, chronic straining, normal aging, and abnormalities of connective tissue predispose some women to stretching, disruption, or dysfunction of levator ani complex,

or connective tissue attachment of the vagina, resulting in prolapse.<sup>6</sup> Patients generally present with several symptoms, including vaginal bulging and pelvic pressure.<sup>7,8</sup> However, the extent of the uterine prolapse problem in Indonesia is not yet known. The aim of this study is to describe the stage, treatment, age, parity, vaginal delivery, and menopause status of women with uterine prolapse in Dr. Soetomo General Academic Hospital, Surabaya.

## Methods

All diagnosed cases of uterine prolapse in the gynecology outpatient clinic, of Dr. Soetomo General Academic Hospital, Surabaya from January 2017 to December 2017 were recorded. The diagnosis of uterine prolapse was made based on an interview and physical examination using the POP-Q system to determine the stage of uterine prolapse. Data was obtained both from the outpatient clinic's registry and from patient's medical record. The inclusion criteria include patient who went to gynecology outpatient clinic, Dr. Soetomo General Academic Hospital Surabaya in January 2017 to December



2017 with diagnosis of uterine prolapse and had complete medical records. Patients with incomplete medical records were excluded.

The variables in this study included stage and treatment of uterine prolapse, age, parity, amount of vaginal delivery, and menopause status. All data analysed descriptively. This study was approved by Dr. Soetomo Academic Hospital Health Research Ethics Committee (Number:0431/KEPK/VII/2018).

## Results

### Menopause ages and multiple births are majorities risk

There were 93 patients of uterine prolapse within 2017, but there were only 82 meet the criteria of inclusion and exclusion. According to age distribution, most of the uterine prolapse patients with 37 cases were older than 65 years old (45.1%), with the average age on the 63 years old. 51 patients were multiparous (62.2%), besides that there were grandemultiparity (34.1%) and only a few primiparous (3.7%). More than half of the patients with uterine prolapse, 50 cases (61%) had more than 3 vaginal deliveries, then followed by 1-3 vaginal deliveries (37.8%) and only 1 case (1.2%) had no vaginal delivery. The percentage of menopausal women who have uterine prolapse in this study is high (91.5%) involving 75 cases compared to women who have not gone through menopause.

Table 1. Distribution of Risk Factor Characteristics of Uterine Prolapse Patients

Variable	Total (n=82)	Percentage (%)
<b>Age (years)</b>		
26-35	2	2.4
36-45	4	4.9
46-55	13	15.9
56-65	26	31.7
>65	37	45.1
<b>Parity</b>		
Primiparous	3	3.7
Multiparous	51	62.2
Grandemultiparous	28	34.1
<b>Vaginal Delivery</b>		
0	1	1.2
1-3	31	37.8
>3	50	61.0
<b>Menopause</b>		
Yes	75	91.5
No	7	8.5
<b>Stage of Uterine Prolapse</b>		
Stage I	10	12.2
Stage II	9	11.0
Stage III	30	36.6
Stage IV	33	40.2
<b>Treatment</b>		
Operative	35	42.7
Conservative	47	57.3

### Patient predominantly in high severity prolapse

According to this study, 33 cases were stage IV prolapse (40.2%), then followed by stage III, I, and II (36.6%, 12.2%, 11.0%). The treatment for uterine prolapse cases found in this study varies including pessarium conservative and operative therapy. Mostly, 47 patients (57.3%) received conservative treatment and only 42.7% received operative treatment. Characteristic of patients and risk factor distribution were presented in Table 1.

## Discussion

We found that according to the age distribution, most of the uterine prolapse patients are older than 65 years old (45.1%) and the incidence increase along with the increasing group age. This finding is similar to several studies which show that pelvic organ prolapse including uterine prolapse prevalence and incidence increases steadily with age.<sup>2</sup> In a cross sectional study of 1004 US women aged 18-83 years, the relative prevalence of prolapse rose with every decade of life.<sup>9</sup> In the Women's Health Initiative, women in the United States age 60-69 years had a higher risk of prolapse compared to age 50-59 years.<sup>4</sup> It is found 2 patients with the prolapse of uteri on the age range of 26-35 years old. The incidence of uterine prolapse on the younger age may be triggered by some other factors, since it is a multifactorial disease. The increased prolapse incidence may result from degenerative processes, physiologic aging and may from hypoestrogenism. Pelvic organ support is maintained by complex interactions among the pelvic floor connective tissue, pelvic floor muscles, and vaginal wall. As women ages, the pelvic organ support becomes weaker. During aging, skeletal striated muscle loses its volume and function and levator loses tone. As striated muscles lose tone, ligamentous and connective tissue support of pelvic organs must sustain more forces from abdominal pressure. As connective tissue bears for long periods, they stretch and may fail. The loss of pelvic support causing an excessive strain on the pelvic floor, eventually leading to prolapse.<sup>7</sup>

In this study, it is found that the percentage is highest in multiparous women (62.2%). In the Pelvic Organ Support Study (POSS), increasing parity was associated with risk of prolapse.<sup>9</sup> Compared with nulliparous, the relative risk of developing prolapse was 8.4 for a woman who had delivered two children.<sup>2</sup> Pregnancy itself predisposes to prolapse suggested by some evidence.<sup>9</sup>

More than half of the patients with uterine prolapse in this study had more than 3 vaginal deliveries. In the Oxford Family Planning Study, increasing vaginal parity was the strongest risk factor for pelvic organ prolapse in women younger than 60 years.<sup>2</sup> Vaginal delivery was associated with greater risk of prolapse compared with cesarean delivery without labor. All events occurring as the fetus transverses the birth canal could predisposes to prolapse. These predisposed risk factors include macrosomia, episiotomy, prolonged second stage labor, forceps use, anal sphincter laceration, epidural analgesia, and oxytocin stimulation of labor. Vaginal delivery and the events occurring could implicate in pelvic floor injury and loss of pelvic support, including pelvic floor striated muscle support. The injuries of levator ani muscle

from either direct muscle or denervation injury during childbirth are involved in prolapse pathogenesis. Nerve injury from stretch or compression during second stage labor may partially denervate the levator ani muscle.<sup>7,10</sup>

We found that uterine prolapse patients were dominantly have gone through menopause. Reproductive hormones, estrogen and progesterone have important roles in the maintenance of connective tissues and the extracellular matrix for pelvic organ support. Hypoestrogen condition after menopause could weaken the supporting ligaments of the pelvic organs.<sup>11</sup> Estrogen level decrease during menopause cause some symptoms of menopause.<sup>12</sup> The connective tissue of the pelvis consists of collagen, elastin, microfibrils, and smooth muscle. Collagen is affected by estrogen because estrogen influences collagen content by increasing synthesis or decreasing degradation. Estrogen deficiency can affect the biomedical composition, quantity, and quality of collagen.<sup>7</sup>

According to stage distribution, most of the uterine prolapse cases are stage IV (40.2%). These findings are similar to a previous study in Sardjito Hospital, Yogyakarta which show stage IV prolapse has the highest percentage (43.3%).<sup>13</sup> High percentage of advance stage might due to most patients tend to come seek for care when they have more severe symptom, but many women with mild to advanced prolapse can have few symptoms and report little or no bother disorder and symptoms and the severity do not always correlate well correlate with advancing stages of prolapse.<sup>6,7,14,15</sup>

The treatment for uterine prolapse cases found in this study varies including conservative and operative therapy. Our result is quite different compared to another study in Sardjito Hospital, Yogyakarta which shows most of patients (90%) received operative treatment. This can happen because treatment choice depends on the type and severity of symptoms, age, medical comorbidities, sexual function, and fertility. For women with asymptomatic or mildly symptomatic need appropriate management because it is difficult to predict symptoms development. Invasive therapy is not selected for asymptomatic women. Meanwhile for women with significant prolapse or bothersome symptoms, nonsurgical or surgical therapy may be selected depends on benefits against risks treatment comparison.<sup>7</sup> We think is important for reproductive age women to be educated about uterine prolapse risk factors as an uterine prolapse prevention.

## Conclusion

The uterine prolapse cases found in Gynecology Outpatient Clinic in Dr. Soetomo General Academic Hospital, Surabaya was most likely to be found in women with older age (>65 years old), multiparous, have more than three vaginal deliveries, and have gone through menopause. Most of them are stage IV and received conservative treatment. It is important for women to be educated about uterine prolapse risk factors as an uterine prolapse prevention.

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## Conflict of Interest

The author stated there is no conflict of interest

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