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# Prevalence of urinary incontinence in women with pelvic organ prolapse at Sanglah hospital Denpasar, Bali-Indonesia



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## ABSTRACT

**Background:** Urinary incontinence is extremely common complaint in every part of the world. It causes a significant health problem with considerable social and economic impact, a great deal of distress and embarrassment, as well as significant cost, to both individual and societies. Urinary incontinence and pelvic organ prolapsed commonly coexist. The prevalence of women presenting with pelvic organ prolapsed are also diagnosed with urinary incontinence was 25-35% and some studies shows higher prevalence. Urinary incontinence gives significant impact on social and productivity of the women.

**Objective:** To determine the prevalence of urinary incontinence in women with pelvic organ prolapsed.

**Methods:** This study is a descriptive study in 67 samples in women with pelvic organ prolapsed. Samples were obtained non-randomly by using consecutive sampling. All samples were examined using Pelvic

Organ Prolapses Quantification (POPQ) procedure to measure degrees of prolapsed. An interview, measurement of residual urine, stress test, bladder diary recording, and urinalysis were performed to investigate presence of urinary incontinence and its type. The data obtained analyzed descriptively for baseline characteristic and to determine its prevalence of urinary incontinence.

**Results:** Prevalence of urinary incontinence in women with pelvic organ prolapsed was 37,32% , consist of 31,32% stress type, 1.49% overactive bladder, and 4.47% overflow incontinence. There was no mixed urinary incontinence found in this study. Prevalence of urinary incontinence was 16.42% and 20.90% on those with I-II degrees and III-IV degrees of pelvic organ prolapsed respectively.

**Conclusion:** Prevalence of urinary incontinence in women with pelvic organ prolapsed was 37,32%.

**Keywords:** Pelvic organ prolapsed, urinary incontinence.

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## INTRODUCTION

Urinary incontinence is extremely common complaint in every part of the world. It causes a significant health problem with considerable social and economic impact, distress and embarrassment, as well as significant cost, to both individual and societies.<sup>1,2</sup> The International Continence Society (ICS) defines incontinence as “a condition where involuntary loss of urine is a social or hygienic problem and is objectively demonstrable”.<sup>3</sup>

The prevalence of women presenting with urinary incontinence worldwide was 25-35% and many previous studies shown the prevalence increase significantly in elderly.<sup>3</sup> In young women, the prevalence of incontinence is usually low, but prevalence peaks around menopause, with a steady rise there-after into later life.<sup>4</sup> In USA, prevalence of urinary incontinence has been reported around 8% - 9% in 20 - 24 years old women, 30% - 35% in pre-geriatric age (50-54 years old), and higher prevalence was reported in geriatric.<sup>2,3</sup>

Pelvic organ prolapse and urinary incontinence affect the life quality millions of women. Although mortality is rare due to this health issue, it has been

shown that embarrassment and self-perception of the body is significantly affected in those with symptoms as well as economic impact.<sup>4</sup> The most recent estimate of the annual costs of urinary incontinence in all ages was over \$11,2 billion dollars, which is greater than the annual direct costs for breast, ovarian, cervical, and uterine cancers.<sup>4,5</sup> A majority (50-75%) of the cost of urinary incontinence is attributed to routine care, including absorbent pads, protection, and laundry.<sup>3,5</sup> Routine care costs are reported around \$5,2 billion dollars per year.

It is important to distinguish between prevalence and incidence with regard to incontinence and prevalence is the more important when considering its impact. Many epidemiologic studies used not only questionnaire but also physical examination, post void residual urine volume measurement, and urinalysis to collect the objective evidence of urinary incontinence.

Incontinence may be a result of bladder dysfunction, sphincter dysfunction, or a combination of both. Urinary incontinence and pelvic organ prolapsed commonly coexist. Up to 48% women

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with pelvic organ prolapsed are also diagnosed with urinary incontinence and majority type of incontinence was stress incontinence (27%).<sup>8</sup> In addition, other disorder such as voiding dysfunction, are in women frequently associated with pelvic organ prolapsed. In Indonesia, only few data of prevalence of urinary incontinence in woman with pelvic organ prolapse. Then this study was conducted to determine the prevalence of urinary incontinence in women with pelvic organ prolapsed.

## MATERIAL AND METHOD

### Study Design and Sample Collection

A cross sectional descriptive study was conducted at Obstetrics and Gynecology Department of Sanglah Hospital to determine the prevalence of urinary incontinence in women with pelvic organ prolapse. This study was conducted from June 2009 until March 2010 by using consecutive sampling. Whole subjects with pelvic organ prolapsed who came to Obstetrics and Gynecology Department of Sanglah Hospital in this interval time were included. The total number of samples in this interval who fulfilled the eligible criteria was 67 samples.

Patients with pelvic organ prolapsed then examined by Pelvic Organ Prolapses Quantification (POPQ) procedure to measure degrees of prolapsed. Then, all of the samples were evaluated by taking the focus history of incontinence, pelvic examination, gynecologic examination, objective evidence of stress incontinence (including assessment for latent stress incontinence), post void residual urine volume measurement, and urinalysis to collect the objective evidence of urinary incontinence. Reevaluation was doing for patients with urinary tract infections after the treatment.

Patients on pelvic organ treatment such as reconstruction surgery, life style modification, kegel exercise, and mechanical support (pessaries ring) treatment were excluded from this study as well as pelvic organ prolapsed patients with pregnancy.

### Statistical Analysis

SPSS 17 was used for data analysis. Baseline characteristic of the subjects were analyzed descriptively. Then, prevalence of urinary incontinence in patients with pelvic organ prolapsed was assessed and tabulated into a table to divided the prevalence of urinary incontinence in each degrees of pelvic organ prolapsed.

### Ethical Approval

The study protocol was approved by Institutional Ethics Committee of Sanglah Hospital / Faculty of Medicine Udayana University.

## RESULTS

67 samples were collected consecutively in polyclinic of obstetrics and gynecology, Sanglah Hospital. Most of the subjects included were 40 – 50 years old (37.31%) with multiple parity as the highest distribution of the samples (88.06%). From the data collection, we found it was an equal educational background among subjects. The highest percentage of educational background was senior high school (41.79%). Baseline characteristic of the subjects is shown in Table 1.

As we know that chronic cough is one of the risk factor of pelvic organ prolapsed, we assessed the history of chronic cough in subjects enrolled. Most of the subjects did not have history of chronic cough (71.64%) and only 4.48% subjects have family history of pelvic organ prolapsed.

Weight change and obesity are another risk factor of pelvic floor dysfunction leads to pelvic organ prolapsed. Body mass index was the indicators of body weight / height to measure its impact on pelvic organ prolapsed. In this study most of subjects were in normal range of BMI, only 31.34% subjects had BMI > 25 and 67.16% have BMI 20 – 25.

In this study we found more than half subjects with mil-to-moderate pelvic organ prolapsed

**Table 1** Characteristics of study group

Characteristics	Total	(%)
<b>Age</b>		
<40 years	20	29.85
40 - <50 years	25	37.31
50-60 years	16	23.88
>60 years	6	8.96
<b>Number of Parities</b>		
1	8	11.94
2	16	23.88
3	27	40.30
4 or more	16	23.88
<b>Family history of POP</b>		
Yes	3	4.48
No	39	58.21
Unknown	15	22.39
<b>History of chronic cough</b>		
Yes	19	28.36
No	48	71.64
<b>Body mass index</b>		
<20	1	1.49
20-25	45	67.16
>25	21	31.34
<b>Education</b>		
Elementary	18	26.87
Junior high school	6	8.96
Senior high school	28	41.79
College	15	22.39

**Table 2** Prevalence of Urinary Incontinence in Women with Pelvic Organ Prolapsed (POP)

POP (n = 67)	Urinary Incontinence	Prevalence (%)
POP all stage	25	37.32%
Mild-Moderate (n = 50)	11	22.00%
Stage I	4	11.43%
Stage II	7	46.67%
Severe (n= 17)	11	82.35%
Stage III	11	78.57%
Stage IV	3	100%

**Table 3** Type of Urinary Incontinence and Distribution in Women with Pelvic Organ Prolapsed

Type of Urinary Incontinence	Total (n= 25)	Percentage (%)
Stress incontinence	21	31.34
Overactive bladder	1	1.49
Urine overflow incontinence	3	4.47
Mixed urinary incontinence	-	-
Total	25	37.32

(52.24% stage I and 22.38% stage II). 17 women with severe degrees of pelvic organ prolapse, 20.90% with stage III and 4.48% with stage IV.

Prevalence of urinary incontinence in women with pelvic organ prolapsed in all stages was 37.32%. Furthermore, prevalence of urinary incontinence in woman with mild-to-moderate (stage I-II) pelvic organ prolapsed was 22.0% and its prevalence increases 4 folds in severe degrees of pelvic organ prolapsed (82.35%). Prevalence of urinary incontinence in women with pelvic organ prolapse is shown in [table 2](#).

Many previous studies also have looked at the relative prevalence of stress, urge, and mixed incontinence in specific populations. Stress urinary incontinence was the most common type of urinary incontinence in this study whereas the overall percentage of urine overflow and overactive bladder incontinence is lower. 21 women (31.34%) from all subjects have stress incontinence which was mean 84% from subjects with urinary incontinence experience the stress type. It was only 4.47% subjects with symptom of urine overflow and only 1.49% with overactive bladder.

## DISCUSSION

Pelvic organ prolapse is downward descent of female pelvic organs, including the bladder, uterus, and the small or large bowel, resulting in protrusion of the vagina, uterus, or both. Data that we collected in Sanglah Hospital, Denpasar from June 2009 until March 2010 by using consecutive sampling shows

a variation in severity of pelvic organ prolapsed. In this study we found more than half subjects with mild-to-moderate pelvic organ prolapsed with 52.24% stage I and 22.38% stage II. 17 women with severe degrees of pelvic organ prolapse, 20.90% with stage III and 4.48% with stage IV.

This distribution is related to bell-shaped curve which also stated in previous study conducted by Swift et al. Majority of the distribution of pelvic floor dysfunction and degrees of pelvic organ prolapsed was dominated by mild-to-moderate stage (stage I-II).<sup>12</sup> It is supported by multicenter cross sectional study of Pelvic Organ Support Study (POSS) involved 1004 women which shows 38% stage I, 35% stage II, and 2 % stage III of pelvic organ prolapsed.<sup>13,14</sup> Its prevalence peaks around menopause and increase significantly in elderly.<sup>15,16</sup>

Prolapse development is multifactorial, with vaginal child birth, ageing, and increasing body-mass index as the most consistent risk factors.<sup>17</sup> Vaginal delivery, hysterectomy, chronic straining, normal ageing, and abnormalities of connective tissue or connective-tissue repair predispose some women to disruption, resulting in prolapse.<sup>18,19</sup> Presence of the risk factors above was assessed in baseline characteristics of the subjects to show the distribution of the risk factors.

In this research, we found prevalence of urinary incontinence in women with pelvic organ prolapsed was 37.32% in all degrees of prolapsed. Prevalence of urinary incontinence in woman with mild-to-moderate (stage I-II) pelvic organ prolapsed was 22.0% and 82.35% in severe pelvic organ prolapse. This result was related to multiple observational studies conducted in Sweden, 170 women diagnosed with urinary incontinence (37,4%) from 454 subjects with pelvic organ prolapse. Study by Sam Siddighi also stated the prevalence of urinary incontinence was around 60-75%.

Pelvic organ prolapse may progress with increasing body mass index. In previous study, patients may have difficulty urinating (stress incontinence) affects 40% of patients with pelvic organ prolapsed. From data collection we found stress urinary incontinence was the most common type of urinary incontinence in this study (31.34%) whereas the overall percentage of urine overflow and overactive bladder incontinence is lower. 21 women from 25 subject involved was diagnosed with stress urinary incontinence, which was mean 84% of all subjects with urinary incontinence experience stress incontinence.

Prevalence of urine overflow incontinence is quite low. Only 3 cases (4,47%) with severe degrees of pelvic organ prolapse diagnosed with urine overflow.<sup>20,21,22</sup> Outlet obstructions may occur in severe degrees of pelvic organ prolapse in stage III-IV, because of pressure on the urethra in anterior vaginal prolapse and

sometimes in large posterior vaginal prolapse lead to chronic urine retention.<sup>24</sup> Chronic retentions will cause excessive stretching in urinary bladder which ended in overflow urine incontinence.<sup>25</sup>

## CONCLUSION

There is certainly large variability in reported prevalence rates for incontinence in women with pelvic organ prolapsed. This study shows the prevalence of urinary incontinence in women with pelvic organ prolapsed was 37.32% which are consist of 31.4% stress incontinence, 4.47% urine overflow type, and 1.49% overactive bladder. There is no mixed type of urinary incontinence found in this study. The prevalence of urinary incontinence in women with grade I-II pelvic organ prolapsed was 22.0%, meanwhile it prevalence on grade III-IV was 4 fold higher (82.35%).

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