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Urine Incontinence Before and After Delivery in Primipara

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ABSTRACT

Introduction: Urinary incontinence is a common condition in pregnancy and postpartum period. It causes discomfort, embarrassment, loss of confidence and self esteem. This study aimed to determine the occurrence of urinary incontinence in pregnant attending antenatal clinic in a tertiary hospital.

Methods: A descriptive observational study was conducted to find out occurrence of urinary incontinence in primiparous attending department of obstetrics and gynecology from August 2014 to August 2015 at B.P.Koirala Institute of Health Sciences.

Results: The total of 100 primigravida were enrolled in the study. Out of which six had urinary incontinence with mean age of 23 years. Most of them were in the period of gestation group 38–40 weeks. 22% of total were obese with mean BMI of 26.69 kg/m^2. Seventy nine patients had vaginal delivery, four had vacuum assisted vaginal delivery and 17 had cesarean section. Age and Body Mass Index (BMI) was not found to be associated with urinary incontinence. Oxford grading for assessment of perineal muscle after delivery showed decline in pelvic muscle tone which was significantly associated with urinary incontinence. However, the mode of delivery, and birth weight of baby was not found to be significant.

Conclusion: The study finding suggested that pregnancy acts a risk factor for development of UI although no preference could be drawn regarding the mode of delivery. Our study also concluded antepartum UI as a risk factor for postpartum UI.

Keywords: primiparity; postpartum; Urinary incontinence

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INTRODUCTION

The International consultation on incontinence describes period prevalence of any urinary incontinence (UI) in pregnancy of 32 – 64 % among all women.[1] Pregnancy and delivery are considered important factors contributing to UI. The physical and hormonal changes in pregnancy, changes in the urethrovesical angle, anatomical defects during delivery, the dynamic force of the pelvic floor muscles and connective tissue and genetic factors may be involved in this process.[2,3] Many women experience their first symptoms of incontinence during pregnancy. These women along with those with UI prior to pregnancy appear to be at increased risk for postpartum UI.[4,5] Labor without vaginal delivery shows negligible effect on the development of UI.[6] It is observed in patients with risk factors for pudendal nerve damage and levator avulsion like operative delivery, prolonged second stage and high birth weight, but only rarely after cesarean.[7] Other risk factors are race, maternal age at first delivery, obesity, smoking, chronic diseases, connective tissue changes, obstetric and gynaecological factors.[8]

UI causes discomfort, embarrassment, loss of confidence and self esteem; adversely affecting physical/ mental health, sexual function and quality of life. [9,10,11] Most of the studies on UI are conducted in European/ Western countries. In Nepal, the prevalence of pelvic floor problem is abundant but less explored. Moreover, Nepalese women do not consider UI as a health problem and it remains hidden. Thus, this study aims to determine the occurrence of UI in primigravida before and immediately after delivery.

METHODS

A prospective comparative cross-sectional study was done in the Department of Obstetrics and Gynecology at B P Koirala Institute of Health Sciences(BPKIHS), Dharan, Nepal. Sample size was calculated using a proportion formula, with a 95% confidence interval. The incidence of UI was taken from various studies done previously. One hundred primigravida beyond 28 weeks period of gestation (POG) attending antenatal OPD at the institution were randomly enrolled within the duration of 12 months. There were total 590 primigravida identified with UI in a year, every fifth case among them was selected until the sample size reached 100. The exclusion criteria were premature labor, pre-pregnant UI, urogynecological surgery and medical disorder like neuropathy. An informed consent form was signed. Patients' demographic characteristics, BMI, last menstrual period, chronological/ sonographic gestational age and the estimated delivery date were noted. Also presence of co-morbidities before pregnancy, history of urinary incontinence in any family members, previous surgeries, drug use and life habits were recorded. Evaluation of symptoms were done by questions on urinary incontinence whether stress, urge or mixed, on the frequency of symptom and those having symptoms of involuntary loss of urine was considered incontinent.

Next, pelvic floor muscle function assessment was done by digital examination in dorsal position using Modified Oxford Grading. It has six grading from zero to five. Zero means no contraction and five means the strong contraction. The volunteers were followed up and reevaluated in the immediate postpartum period in accordance with the same previously described protocol before they were discharged from hospital. Incontinence was reassessed and questionnaire was filled. Information on the mode of delivery, duration of second stage of labor and weight of the baby was elicited. Data analysis was done using Statistical Package for Social Sciences (SPSS) software 11.5.Chi- square test including Mc Nemar, Kendall's tau-c U test were used in this study. Differences were considered significant when P value was <0.05. The study was conducted after approval by Institutional Ethical Review Board of BPKIHS.

RESULTS

A total of 100 women were enrolled for the study. Among them 59% women were in late third trimester i.e. 38- 40 weeks period of gestation. Most of the patients were of age group 20- 35 years with mean age of 23 years. Those who had UI were of older age group compared to who did not have UI but the finding was not statistically significant (Table 1). Sixty percent of the patients had high BMI with calculated mean BMI of 26.69 kg/m^2. Women with UI had a higher average BMI of 29.00±4.43 kg/m^2 compared to 26.54±3.89 kg/m^2, however it was not significant statistically (Table 1).

Table 1: Association of urine incontinence with Age and BMI

Characteristics	Urine incontinence Yes (mean ± SD)	No (mean ± SD)	p-value
Age in years	25.17±2.79	22.90±3.76	0.151
BMI in kg/m²	29.00±4.43	26.54±3.89	0.140

Table 2: Urinary incontinence and other symptoms before and after delivery

Components	Categories	Before delivery (n=100)	After delivery (n=100)	p-value	Remarks
Symptom of urine incontinence	Present	6	6	1.000	NS*
	Absent	94	94		
Urinary frequency	Present	20	5	<0.001	Sig*
	Absent	80	95		
Nocturia	Present	6	1	0.063	NS*
	Absent	94	99		
Total		100	100		

Table 3: Pelvic floor muscle function assessment using Modified Oxford Grading before and after delivery

Pelvic floor muscle function	Categories	Before delivery (n=100)	After delivery (n=100)	p value	Remarks
Oxford grading	Good	46	44	<0.001	Sig**
	Moderate	29	33		
	Strong	24	17		
	Weak	1	6		
Total		100	100		

Table 4 : Mode of delivery and urine incontinence

Characteristics	Category	Urine incontinence Yes	No	p value
Mode of delivery	Vaginal delivery	3	76	0.133
	Vacuum assisted vaginal delivery	1	3	
	Cesarean section	2	15	
Total		6	94	

Table 5: Birth weight of baby and urine incontinence

Characteristics	Category	Urine incontinence Yes	No	P value
Birth weight of baby in kilograms	<4	6	92	0.883
	≥4	0	2	
Total		**6**	**94**	-

During the study, six among 100 women complained about UI in antenatal period. The duration of UI was found to be less than one week in one women and more than one week in remaining five women. The daytime urinary frequency was significant as it appeared in 20 women. On the other hand, nocturia was found in six women which was not significant. After delivery, only six among 100 women had UI, five women had urinary frequency and one woman had nocturia. These data showed there was improvement in other symptoms after delivery however the number of women with UI remained the same (Table2).

Forty six percent of the woman had good pelvic muscle tone before the delivery, 29% women had moderate, 24% women had strong and one percent woman had weak pelvic muscle tone. In the postpartum period, 17% had strong, 44% had good, 33% had moderate and six percent had weak pelvic floor muscle tone(Table 3).

Of 100 pregnant women who were undertaken for the study 79 had vaginal delivery, four instrumental and 17 had cesaerean delivery Three among 79 vaginal deliveries, one among four vacuum assisted vaginal delivery and two among 17 cesarean sections had UI respectively. In contrary to our assumption, there were no cases which developed de novo incontinence in the postpartum period and showed that the mode of delivery did not have significant effect on occurrence of UI. Two women had prolonged duration of second stage of labor but none had UI in immediate postpartum period. This showed no significant relation between duration of second stage of labor and UI (Table 4).The relationship between the birth weight of baby and urine incontinence was also not found significant (Table 5).

DISCUSSION

Urological problems are commonly seen in pregnant women. Among them, urinary incontinence significantly influences the quality of life of pregnant women. The identification of the burden of this problem in the society and the country may require more time and follow up of the women. Various studies done in different parts of the world shows a prevalence of urinary incontinence as 15–25% for women aged 15–64 year. [12,13,14] In Nepal, pelvic floor disorder is not considered as a problem and accordingly very few studies have been conducted in the topic. In this study, of 100 women enrolled for study we found incontinence in six pregnant women before delivery. These women were having de-novo incontinence during the pregnancy. Moreover, 20 among 100 women had increased frequency of micturition. Similar studies done in China and India showed urinary incontinence in 29.7% & 25.8% of pregnant respectively. [15,16]

The number of pregnant women with incontinence in our study was found to be less than studies done in other countries; the less number might have been due to relatively small population size and short time of study. In this study, no preference of maternal age for UI could be drawn. Unlike other studies, the mean age of the pregnant women in this study was 23 years, in contrast to other similar studies, [17,18] this might have resulted in low incidence of UI in this region. There are several studies that showed increasing age as a risk factor irrespective of pregnancy.[19,20] It is worth noting that other similar studies show significant association between high pre-pregnant BMI and occurrence of UI[21] but it was also not found significant in our case.

In contrast to other study, the results of this study showed that the occurrence of UI did not decrease after delivery compared to the antenatal period. Also there was no de novo UI diagnosed in the immediate postpartum period in any women. It may be due to the immediate follow up of the women after delivery. All the women with UI after delivery also had UI before delivery which was quite similar to the findings of other studies. As listed in various studies the UI in antenatal period is an important risk factor for the occurrence of same after delivery. [14,21-23] In our study, the occurrence of SUI and UUI among the pregnant women was equal before and after delivery, showing no predominance of one symptom over another. In their study, Sangsawang et al. and Wesnes et al. had proposed that the most common type of UI in pregnant women is SUI. [13,24] Besides UI, other lower urinary tract symptoms have been found to have great impact on the pregnant women. Among various lower urinary tract symptoms, our study also observed that increased urinary frequency was experienced by 20 women before delivery which has little to moderate impact on their life. After delivery same symptom was seen in five women. The result is of statistical significance.

There are still many controversies going on regarding

the effect of mode of delivery on the urinary symptoms.[2,25] In this study, three women among six incontinent pregnant had vaginal delivery and one had vacuum assisted vaginal delivery. However, the mode of delivery as a risk factor for UI in postpartum could not be established statistically. Studies have shown that among the instrumental deliveries the application of forceps has more impact on the pelvic floor muscle leading to occurrence and persistence of UI.[14,26] Similarly, no relation could be established between birth weight of the baby and appearance of UI in immediate postpartum period, as also seen in many other studies. [27] The strength of pelvic floor muscle was found to be decreased significantly after the vaginal delivery as assessed by using oxford grading system. It implies that there must be some changes in the pelvic floor muscle during the process of vaginal delivery which affects its strength. It was also observed that there was no declination in pelvic floor muscle tone after cesarean section which showed that cesarean might be protective against pelvic floor disorder. We found occurrence of UI in four women among 83 women following vaginal delivery & two women among 17 women following cesarean section. The UI occurrence with different mode of delivery was not found to be statistically significant.

Nepal is a developing country with its peculiar population profile, literacy level, socioeconomic status and religious beliefs that is different from other countries. Although the problems related to urine incontinence have important impact on the quality of life of the pregnant women, they tend to hide the problems from others and thus the exact prevalence of urine incontinence is difficult to estimate. The limitations of the present study are small sample size and short time study period. In addition, follow up of the patients in immediate postpartum period did not provide enough time for the symptoms to develop. During the study it was found that pregnant women in our part of the world do not give much importance to the quality of life which is probably due to the lack of awareness amongst them. For the women in our community, UI in pregnancy seems to be a normal or physiological process hence they are hesitant to share these problems. Small sample size and short time period were the limitations of the study. Also follow up of the patients in immediate postpartum period did not provide enough time for the symptoms to develop.

CONCLUSION

The study showed that six among 100 enrolled women had urine incontinence during antepartum as well as immediate postpartum period. The study finding suggested that pregnancy acts a risk factor for development of UI although no preference could be drawn regarding the mode of delivery. Although vaginal delivery has adverse effect on pelvic floor muscle tone, it was not associated with increased risk for UI. Our study concluded antepartum UI as a risk factor for postpartum UI. Hence, diagnosis of UI in antenatal period may help women to adapt preventive habits so as to avoid its occurrence in the postpartum period.

REFERENCES

1. Milsom I AD, Lapitan MC, Nelson R, Sillén U, Thom D. Epidemiology of urinary (UI) and faecal (FI) incontinence and pelvic organ prolapse (POP). Incontinence, 4th edn Committee 1 Paris, France: Health Publication Ltd 2009: 35-111.
2. Menezes M, Pereira M, Hextall A. Predictors of female urinary incontinence at midlife and beyond. Maturitas. 2010; 65: 167-71.
3. Norton PA, Allen-Brady K, Wu J, Egger M, Cannon-Albright L. Clinical characteristics of women with familial pelvic floor disorders. International urogynecology journal. 2015; 26: 401-6Viktrup L, Lose G. The risk of stress incontinence 5 years after first delivery. American journal of obstetrics and gynecology. 2001; 185: 82-7.
4. Stainton MC, Strahle A, Fethney J. Leaking urine prior to pregnancy: a risk factor for postnatal incontinence. The Australian & New Zealand journal of obstetrics & gynaecology. 2005; 45: 295-9.
5. Gartland D, Donath S, MacArthur C, Brown SJ. The onset, recurrence and associated obstetric risk factors for urinary incontinence in the first 18 months after a first birth: an Australian nulliparous cohort study. BJOG : an international journal of obstetrics and gynaecology. 2012; 119: 1361-9.
6. Albrich SB, Laterza RM, Skala C, Salvatore S, Koelbl H, Naumann G. Impact of mode of delivery on levator morphology: a prospective observational study with three-dimensional ultrasound early in the postpartum period. BJOG : an international journal of obstetrics and gynaecology. 2012; 119: 51-60.

7. Kristiansson P, Samuelsson E, Von Schoultz B, Svärdsudd K. Reproductive hormones and stress urinary incontinence in pregnancy. Acta Obstetricia et Gynecologica Scandinavica. 2001; 80: 1125-30.
8. Dolan LM, Walsh D, Hamilton S, Marshall K, Thompson K, Ashe RG. A study of quality of life in primigravidae with urinary incontinence. International urogynecology journal and pelvic floor dysfunction. 2004; 15: 160-4.
9. Kocaoz S, Talas MS, Atabekoglu CS. Urinary incontinence in pregnant women and their quality of life. Journal of clinical nursing. 2010; 19: 3314-23.
10. Hermansen IL, O'Connell BO,Gaskin CJ. Women's explanations for urinary incontinence, their management strategies, and their quality of life during the postpartum period. Journal of wound, ostomy, and continence nursing : official publication of The Wound, Ostomy and Continence Nurses Society / WOCN. 2010; 37: 187-92.
11. Mason L, Glenn S, Walton I, Appleton C. The prevalence of stress incontinence during pregnancy and following delivery. Midwifery. 1999; 15: 120-8.
12. Wesnes SL, Rortveit G, Bo K, Hunskaar S. Urinary incontinence during pregnancy. Obstetrics and gynecology. 2007; 109: 922-8.
13. Burgio KL, Zyczynski H, Locher JL, Richter HE, Redden DT, Wright KC. Urinary incontinence in the 12-month postpartum period. Obstetrics and gynecology. 2003; 102: 1291-8.
14. Chan SS, Cheung RY, Yiu KW, Lee LL, Chung TK. Prevalence of urinary and fecal incontinence in Chinese women during and after their first pregnancy. International urogynecology journal. 2013; 24: 1473-9.
15. Sharma JB, Aggarwal S, Singhal S, Kumar S, Roy KK. Prevalence of urinary incontinence and other urological problems during pregnancy: a questionnaire based study. Archives of gynecology and obstetrics. 2009; 279: 845-51.
16. Al-Mehaisen LM, Al-Kuran O, Lataifeh IM, et al. Prevalence and frequency of severity of urinary incontinence symptoms in late pregnancy: a prospective study in the north of Jordan. Archives of gynecology and obstetrics. 2009; 279: 499-503.
17. Kristiansson P, Samuelsson E, Von Schoultz B, Svärdsudd K. Reproductive hormones and stress urinary incontinence in pregnancy. Acta Obstetricia et Gynecologica Scandinavica. 2001; 80: 1125-30.
18. Sangsawang B. Risk factors for the development of stress urinary incontinence during pregnancy in primigravidae: a review of the literature. European journal of obstetrics, gynecology, and reproductive biology. 2014; 178: 27-34.
19. Prabhu SA, Shanbhag SS. Prevalence and risk factors of urinary incontinence in women residing in a tribal area in Maharashtra, India. Journal of research in health sciences. 2013; 13: 125-30.
20. Svare JA, Hansen BB, Lose G. Risk factors for urinary incontinence 1 year after the first vaginal delivery in a cohort of primiparous Danish women. International urogynecology journal. 2014; 25: 47-51.
21. Bozkurt M, Yumru AE, Sahin L. Pelvic floor dysfunction, and effects of pregnancy and mode of delivery on pelvic floor. Taiwanese journal of obstetrics & gynecology. 2014; 53: 452-8.
22. Thomason A, Miller J , DeLancey J. Urinary incontinence symptoms during and after pregnancy in continent and incontinent primiparas. International urogynecology journal. 2007; 18: 147-51.
23. Sangsawang B, Sangsawang N. Stress urinary incontinence in pregnant women: a review of prevalence, pathophysiology, and treatment. International urogynecology journal. 2013; 24: 901-12.
24. Barbosa AM, Marini G, Piculo F, Rudge CV, Calderon IM, Rudge MV. Prevalence of urinary incontinence and pelvic floor muscle dysfunction in primiparae two years after cesarean section: cross-sectional study. Sao Paulo medical journal = Revista paulista de medicina. 2013; 131: 95-9.
25. Baydock SA, Flood C, Schulz JA, et al. Prevalence and risk factors for urinary and fecal incontinence four months after vaginal delivery. Journal of obstetrics and gynaecology 2009; 31: 36-41.
26. Cuerva Gonzalez MJ, Lopez Carpintero N, de la Calle Fernandez MM, Usandizaga R, Gonzalez A. Postpartum urinary and fecal incontinence in gemelar pregnancy according to route and mode of delivery. Ginecologia y obstetricia de Mexico. 2011; 79: 540-6.