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Prevalence of stress urinary incontinence amongst women attending gynaecology OPD at an Urban Women's Hospital

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Abstract
Background: Urinary incontinence (UI) is one of the most common diseases amongst women. The different types of UI can be stress urinary incontinence (SUI), urge incontinence (UI) or a combination of the two. The other types of UI are relatively infrequent. Amongst these, SUI is the commonest. SUI leads to small amounts of urine being leaked in situations when the intra-abdominal pressure rises. This leads to wetness in the perineal area, excoriation of skin and can be a source of major social embarrassment. It may lead to women avoiding social interactions and becoming reclusive.
Methods: This study was conducted at an Urban Government Women's hospital over a period of twelve months. A total of 1200 women above 20 years of age who met the inclusion criteria were included. Consent of the patient was taken. The data was collected using a predesigned proforma.
Results: We studied 1200 cases out of which 228 (19%) cases were found to have stress urinary incontinence.
Conclusions: Stress urinary incontinence amongst women is a problem which is underdiagnosed. Awareness about the disease and simple clinical evaluation can lead to diagnosis. The study highlights ignorance about the problem and need to evaluate and treat these patients.

Keywords: prevalence, urinary incontinence, stress urinary incontinence, parity

Introduction

Urinary incontinence is one of the commonest ailments affecting large number of women. As per various studies, it has been estimated that about 23% to 55% of women across different age groups may be affected [1-3]. The most common types are urge urinary incontinence (UUI), stress urinary incontinence (SUI) and a combination of the two i.e. mixed urinary incontinence (MUI) [4].

Out of the above, SUI appears to be the commonest. In SUI, whenever there is increase in intra abdominal pressure like sneezing, coughing, laughing or jumping, a small amount of urine leaks out. On the other hand, in UI, when the patient has an urge to pass urine, she has to rush to the rest room and sometimes passes urine before reaching the facility. In UI, large amount of urine leaks out. This was also referred to as overactive bladder. In mixed incontinence, there is a combination of the two.

The problem is often under- reported because of various reasons. There could be ignorance about it being a disease. There is a false notion amongst a large number of women that it is a part of ageing! There is also a lack of awareness amongst health care providers about the disease.

SUI is known to occur because of urethral hypermobility or intrinsic sphincter deficiency. The two can also co-exist. There could also be an intrinsic problem of the urethra, wherein the post wall of the urethra moves more during straining leading to opening up of the urethra and leakage of urine [5-7].

Normally, the hammock like support offered by the pelvic floor keeps a woman continent. Loss of this support leads to SUI [8, 9]. During the filling phase of the bladder, the bladder remains quiescent and the urethra remains closed. During voiding, the bladder contracts and the urethra opens to help voiding of urine. When this mechanism fails, urinary incontinence occurs.

Stress urinary incontinence

In SUI, the anatomy is distorted. SUI is very commonly associated with uterovaginal prolapse. Since the bladder neck and urethra descend down, the intra abdominal pressure is unequally transmitted to the bladder and the urethral sphincter and urethra. Whenever there is an increase in the intra abdominal pressure as in sneezing, coughing, laughing, the increased pressure is transmitted to the bladder musculature but not to the urethra.

This unequal distribution of pressure leads to leakage of urine. Usually, in SUI, the volume of urinary leakage is small. However, due to unexpected nature of the time of leakage, the affected ladies tend to become socially cut off.

In mild cases, the urinary leakage is in frequent and small in amount. In severe cases however, the urine can leak even on slight increase in intra abdominal pressure leading to embarrassment.

Demonstration of SUI

A patient suspected to have stress urinary incontinence is to be examined on full bladder, usually in a lithotomy position. After separating the labia, she is asked to strain/Cough.

Leakage of urine along with straining confirms SUI. In patients where this cannot be demonstrated in lying down position, she can be examined in squatting position.

Bonney's test

As described by Bonney, the pressure in peri urethral area is increased by either two examining fingers on both sides of urethra or a sponge holder. The patient is again asked to cough. In case the patient does not leak urine now, she is likely to benefit from mid urethral slings which lift up the bladder neck and urethra.

Q tip test

A cotton head swab stick or a sterile ear bud is placed in urethra and the patient is asked to strain. In case the tip mover more than 30degrees, the test is considered positive and indicates urethral hypermobility. The test is not performed frequently now.

Urodynamic investigations

Urodynamic Investigations are not a must. They are time consuming and costly. They should be resorted to only when there is a doubt in clinical diagnosis, or the patient has one failed surgical procedure.

Materials & methods

The data was collected at an Urban Municipal hospital for women which is being run by the district administration. A general and systemic examination was done. Patients were subjected to a gynaecological examination. Urinary leakage was demonstrated on straining and Bonney's test was done. Patients were subjected to blood sugar estimation to rule out diabetes, an ultrasound of the pelvis was done to rule out pelvic mass which could be pressing the bladder. A urine routine and culture was done for all patients to rule out UTI since UTI can itself lead to UI.

A total of 1200 patients were included in the study which was carried out over a period of one year. Pregnant ladies and those in puerperium were excluded. The patients who had UTI were excluded from the study. Only parous women were included in the study.

Results

A total of 1200 patients were included in the study.

The prevalence was found to 19%. A total of 228 women were found to have SUI.

Table 1: Age in years. Distribution of patients having SUI (n= 228)

S. No	Age	Number of Patients	Percentage
1	< 30	3/605	0.5%
2	30-60	102/340	30%
3	>60	123/255	48.2%

The prevalence of SUI increases rapidly with age. Only 0.5% women before the age of 30 years had SUI whereas almost 48% women more than 60 years of age suffered from the problem.

Table 2: BMI and SUI (n= 228)

S No	BMI		Number of Patients	Percentage
1	< 18.5	Underweight	2/238	0.8%
2	18.5- 24.99	Normal weight	52/702	7.4%
3	25- 29.99	Over weight	151/208	72.6%
4	>30	Obese	23/52	44.2%

Obesity is associated with SUI. In the underweight patients, SUI was present in only 0.8% cases where as it was 72.6% in overweight and 44.2% in the obese women.

Table 3: Parity and SUI (n= 228)

S No	Parity	No. Of patients	Percentage
1	1	25/410	6%
2	2	94/619	15%
3	3	65/105	61.9%
4	4 and above	44/65	67.6%

The prevalence of SUI increases in parous ladies with increasing parity. The para 1 ladies have a prevalence of only 6% whereas in para 3 and above, it rises above 60%.

Table 4: Co- morbidities and SUI

S No	CO- Morbidity	No Of patients	Percentage
1	Previous pelvic surgery	12/ 42	28.5%
2	Chronic Respiratory Disease	17/ 60	28.3%
3	Coexisting Hernia	5/ 14	35.7%

The prevalence of SUI in patients having certain co-existing ailments increases the risk of SUI. Previous pelvic surgery, amongst which the commonest was hysterectomy increased the risk of SUI and was present in 28.5% cases who had undergone hysterectomy. The patients who suffered from chronic respiratory diseases, commonly being TB and Asthma predisposed to developing SUI and were present in 28.3% cases. 14 patients out of 1200 had co- existing hernia and 35.7% of these women also had SUI.

Discussion

Out of the 1200 women in our study group, 228 women reported stress urinary incontinence and prevalence was 19%. Singh U *et al*. in their study reported the prevalence of stress incontinence was 16.13%. [10] In other studies, the prevalence has been reported at different rates varying from 13 to 24% [11-15].

Studying the prevalence in different age groups, in the age group of <30yr, 3 out of 605 patients (0.5%) had SUI. In the next age group 30-60 yrs, 102 out of 340 cases had SUI bringing the rate of prevalence to 30%. In the elderly age group of 60 yr and above, 123 cases were found out of 255 women i.e. the prevalence was 48.2%. It is evident that the prevalence of stress urinary incontinence increases with age.

Significantly high prevalence (38.4%) in women above 40yr is found by two Indian studies [10, 11]. It is similar to most of the other studies published in different parts of the world, (36%-43%) in Chiarelli P *et al*. and Danforth KN [16, 17]. Nitti VW reported that the prevalence is relatively low in early life, it

peaks around the time of menopause and then keeps increasing with age [18].

In present study all the primi para were found to have a prevalence of 6%, with 25 out of 410 women in this age group having SUI. Out of para 2 cases (619 cases), 15% (94women) had stress urinary incontinence. In cases of para 3 and para 4 and above, the prevalence was 61.9 and 67.6% respectively.

Similar relationship between parity and stress urinary incontinence was reported in other studies.

In our study, we had 60 cases with chronic respiratory diseases which included patients of Pulmonary TB, asthma and COPD.17 women (28.3%) out of this group had SUI. In all cases of hernia (n=14), 35.7% had stress urinary incontinence. Among all the cases who undergone pelvic surgery, 28.5% had stress urinary incontinence.

The prevalence of stress urinary incontinence is high in females having chronic cough, obesity, hernia, or who undergone pelvic surgery, commonest being hysterectomy. The association with previous pelvic surgery can be explained by damage to the pelvic nerves during the operative procedures. Hysterectomy could result in damage to distal branches of pudendal nerves and inferior hypogastric plexus. Brown JS *et al*. reported that history of hysterectomy, recurrent urinary infection and perineal trauma increases the risk of urinary incontinence [15].

Khullar *et al*. [19] too reported that urinary incontinence has increased prevalence with increasing BMI. We found that SUI increased with increasing Obesity. Whereas 0.8% of women in the underweight category had SUI, it increased steadily and 72.6% of women in the BMI group of 25 to 29.9 were found to have varying grades of SUI.

Conclusion

The study brings out the prevalence of SUI in women attending Gynaecology OPD across different age groups. It is evident that SUI is a very common clinical entity. It also brings out that this is underreported by patients. It can be easily diagnosed in most cases and treatment can be offered.

The very nature of the disease emphasises that it could have substantial adverse effect on the quality of life of the women who are affected and diagnosis and treatment has vast scope in improving the same. We have highlighted the risk factors. The prevalence goes up as the age increases and also with parity and obesity. This emphasises the measures which may be taken to prevent the disease and creation of awareness amongst women about the problem.

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