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PREVALENCE OF URINARY INCONTINENCE IN POSTMENOPAUSAL FEMALES WITH INCISIONAL ABDOMINAL SURGERY

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Abstract:

This study was undertaken to investigate the prevalence of urinary incontinence in postmenopausal females with incisional abdominal surgery. In this study we assessed 100 postmenopausal females with the history of any type of incisional abdominal surgery such as fibroid, hernia, and hysterectomy etc. to find out is all the females with surgical history are prone to land up with urinary incontinence. We used revised urinary incontinence scale (RUIS) to assess the urinary incontinence and questionnaire were used to assess the abdominal muscles strength and endurance. According to the RUIS 92% of females are suffering with mild stress urinary incontinence, 5% of females suffering with no urinary incontinence, 3% of females suffering with moderate urinary incontinence and 0% of females with severe urinary incontinence. Also questionnaire were show that there is maximum percentage of females are with weak abdominal and PFM strength. The study showed that there is mild prevalence of Stress urinary incontinence in postmenopausal females with incisional abdominal surgery.

Keywords: Urinary incontinence, Postmenopausal females, Prevalence.

INTRODUCTION:

Menopause is critical period in every women's life and it is documented as a complete cessation of menstruation for a period of 1 year. Perimenopause duration is variable, and it is defined as the time of irregular periods until menopause [(1).] Also as the time of the final menstrual period after the 12 months of amenorrhea. In addition, post menopause is the period following the final menses [(2).] At present stage there are 49.1% females are in menopausal phase with the age group of 45 – 49 yrs. Recent scientific reports indicate that already before the onset of menopause, referred to the climacteric, it causes many unpleasant symptoms that worsen the quality of life of many women. These symptoms are very often the result of hormonal and metabolic changes and consequently, increase the risk of chronic diseases. [(3)]

Perimenopause is a defined period of time beginning with the onset of irregular menstrual cycle until the last menstrual period, and is marked by fluctuations in reproductive hormones. [(4)] Oestrogen is one of the main hormone, which start reducing during the menopausal phase. fluctuation and deficiencies in oestrogen level it cause many of the changes and symptoms in female body such as hot flushes, vaginal dryness, sleep disturbances, urinary tract infection, vaginal atrophy, mood symptoms, osteoporosis, cardiovascular symptoms, urinary incontinence and the muscular problem as well.

Normal ability of a person to store urine and faeces for a particular time with conscious control over the time and place of voiding and defecation is called continence. Incontinence is define as involuntary loss of urine or faeces at unsocial time and at inappropriate places.[(5)] Stress urinary incontinence is the commonest type seen in postmenopausal females. In this study, we find out the prevalence of urinary incontinence especially in women with the history of incisional abdominal surgery and in the postmenopausal phase.

There are two common types of urinary incontinence found in women that is stress and urge urinary incontinence. Stress urinary incontinence is one of the commonest type seen in postmenopausal females. There are different studies done on the prevalence of urinary incontinence, one is done on women with age group of 25yrs and above, and the overall result of prevalence of urinary

incontinence was 41%. Rates were lower in nulliparous and postmenopausal women than parous and postmenopausal women. [6] Were the estimated incidence of urinary incontinence increased with age, especially through ages 25 - 29 and 45 - 49.[7]

Stress urinary incontinence (SUI) defined as a leakage of urine with physical exertion, most commonly from coughing, sneezing or laughing [8]. The "hammock hypothesis" state that increased intra-abdominal pressure stretches the ligaments and tissue of pelvic floor muscles leading to permanent damage to the tissue.[9,10] Increased intra-abdominal pressure is one of the reason to fatigue the muscles of the pelvic floor as they balance forces. Therefore, when the upward force from pelvic floor muscles does not balance the downward force from the abdomen, stress urinary incontinence can occur. [11] This similar mechanism explaining how child bird damages pelvic floor muscles. With diffrent physical activity there is "co-contraction" of both abdominal muscles and pelvic floor muscles, and the continue contraction of pelvic floor muscles strengthens the muscles and helps prevent stress urinary incontinence. [9, 12]

Multiple abdominal surgeries put the female at a greater risk for developing various problem like urinary incontinence and muscular weakness specially core muscles which may cause changes in quality of life. In addition, there is simultaneous loss of ovarian hormone production in women, which directly related to the muscle strength. [13] As there is research done that the reduce level of oestrogen hormone affect the PFM and cause reduce strength of pelvic floor muscle. Awareness of all this changes, which causes complications in postmenopausal stage, is quite less. In this project we are going to assess the postmenopausal women who undergone an incisional abdominal surgery to find out the prevalence of urinary incontinence. There is correlation between core and pelvic floor muscle strength with urinary incontinence.

In almost all community-based studies, the reported prevalence rates of UI in men are less than in women by a ratio of 1:2. Prevalence rates for any UI in men ranging from 1% to 39% have been published. [14] Urinary stress incontinence reduces both social interaction and physical activities and it is associated with poor self-related problem, and is to be considered normal with aging; however, there are changes in the bladder and pelvic structure that occurs with age and which can contribute to urinary incontinence. [15, 16]

A proper understanding of the prevalence of urinary incontinence in women is an essential step in reducing the intimate problem of a woman. Because of the different problem and the change in quality life of female, we carried out the study to find out the prevalence of UI in post-menopausal women with incisional abdominal surgery history and to aware those for the good future and a good quality of life or an anxiety less life. The study is design to identify associated factors with incontinence, which further help to improve the UI problem.

Methodology and Procedure

No. of participants - 100

Inclusion criteria

Postmenopausal women with age group 40 to 75.
Women with incisional abdominal surgery.
Post-operative 1year and more.

Exclusion criteria

Women with fibroid or any type of chronic diseases.
Women with any history of neurological or musculoskeletal problem.

Outcome measure

Revised urinary incontinence scale (RUIS). [Reliability of RUIS is Cronbach's alpha =0.73]
Self-made PFM and CORE MUSCLE questionnaire.

Procedure

Permission was obtain from concerned college committee, department of physiotherapy, TMV, Pune. The aim of the study was explain to the participants. Consent form was given to all the participants.The samples were collected according to the inclusion and exclusion criteria. Demographic data was obtained using the demographic questionnaire. The revised urinary incontinence scale used to assess urinary incontinence and questionnaire used to assess the other problem related to core muscle and pelvic floor muscle. Data analysis was done after the collection of all the samples.

Result and Discussion

Table no. 1: RUIS scoring

ranges	percentage
None	5%
Mild	92%
Moderate	3%
Severe	0%

Interpretation: Table no. 1 shows that 92% of females are suffering with mild stress urinary incontinence, 5% of females suffering with no urinary incontinence, 3% of females suffering with moderate urinary incontinence and 0% of females with severe urinary incontinence.

Graph no. 1

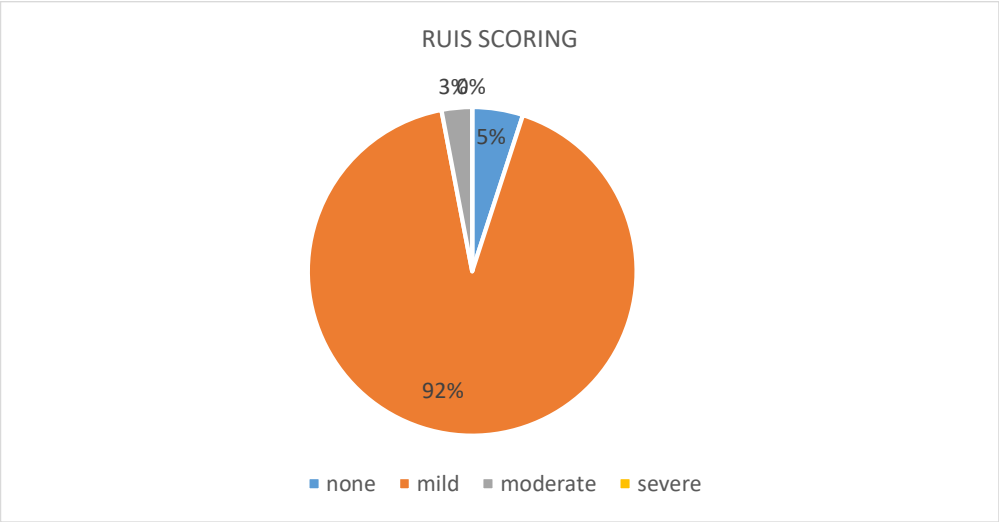

Table no 2: pelvic floor muscle strength

	YES	NO	SOMETIMES
Question no. 1 (leaking of urine while physical activity)	74%	6%	20%
Question no. 2 (history of prolapse)	24%	76%	-
Question no. 3 (difficulty in holding urine)	68%	5%	27%

***Interpretation*:** Table no. 2 shows that percentage response to pelvic floor muscle strength in self-made questionnaire

74% of females leak urine while physical activity like coughing sneezing and laughing, 6% of females are never leak urine while physical activity, and 20% of females leak urine sometimes during physical activity.

76% of females not have history of uterine prolapse, and 24% of females are having history of uterine prolapse

68% of females having difficulty in holding urine for a long time, 27% of females have difficulty in holding urine sometimes, and 5% of females are not having difficulty in holding urine for long time.

Table no. 3 core muscle strength

	yes	no	sometimes
Question no. 1 (difficulty in standing straight)	65%	5%	30%
Question no. 2 (tend to slouch in chair)	60%	2%	38%
Question no. 3 (difficulty in standing for long time)	49%	0%	51%
Question no. 4 (pain in different region after work or standing)	58%	12%	30%
Question no. 5 (frequently feel as weak)	55%	5%	40%
Question no. 6 (difficulty in maintaining single posture)	55%	2%	43%
Question no. 7 (does slouch posture cause shortness of breath)	38%	18%	44%

***Interpretation*:** Table no.3 shows percentage of response to core muscle strength according to self-made questionnaire.

65% of females are having difficulty in standing up straight, 30% are having difficulty in standing up straight sometimes and 5% are not having any difficulty in standing up straight.

60% of females are tend to slouch in chair while working, 2% are not slouch in chair, and 38% are tend to slouch in chair sometimes.

49% of females are find it hard to stand up straight for long period of time, 51% are find it hard sometimes, and 0% are not find it hard.

58% of females are having pain in different region after work or after standing, 12% not having any pain, and 30 % are have pain sometimes.

55% of females are frequently feel, as whole body is getting weak, 5% are not feel weak and 40% are feel it sometimes.

55% of females are having difficulty in maintaining single for a long time, 2% are not having any difficulty, and 43% are having difficulty sometimes.

38% of females are prone to cause shortness of breath due to slouch posture, 18% does not prone, and 44% having shortness of breath sometimes.

Table no 4: core muscle endurance

	yes	no	sometimes
Question no. 1	77%	3%	20%
Question no. 2	93%	7%	

***Interpretation*:** Table no. 4 shows that percentage of response to core muscle endurance in self-made questionnaire.

77% of females fatigue easily while work as compare to others, 3% are not getting fatigue, and 20% get fatigue sometimes.

93% of females have reduced their working capacity due to pain, and 7% of females have not.

Discussion

The present study was conducted to find the prevalence of urinary incontinence in postmenopausal females with history of incisional abdominal surgery. In the present study 100 Indian females were selected according to inclusion and exclusion criteria, which included postmenopausal females with age group 45 to 75years. All the subjects were given two different form that is Self-made questionnaire related to Pelvic Floor Muscle strength and core muscle strength and revised urinary incontinence scale. Amongst 100 postmenopausal females 19% females belong to 41 to 50 age group, 30% females belong to 51 to 60 age group, 36% females belong to 61 to 70 age group, and 15% females belong to 71 to 80 age group.

Age is one of the major factor, which affect the urinary incontinence. Some study has shown that the prevalence was highest in the younger age groups and lowest between 65 and 69 years of age, thereafter it increased again.[17] Prevalence of urinary incontinence increased with age. The commonest type of UI was stress (50%), then mixed (32%) and finally urge (14%). Risk factors of urinary incontinence included parity, obesity, chronic cough, depression, poor health, lower urinary tract symptoms, previous hysterectomy, and stroke. [18]

According to Jeanette S Brown, study, they found out that chance of developing Urinary Incontinence after hysterectomy is about 40% higher for women with hysterectomy.[15]

According to table no.1; Result of revised urinary incontinence scale among 100 postmenopausal females, 5% of females score between 0 to 4 that is no urinary incontinence, 92% of females score between 4 to 8 that is mild urinary incontinence, 3% of females score between 9 to 12 that is moderate urinary incontinence, and 0% of females with severe urinary incontinence.

According to that we can say 92% of females with the incisional abdominal surgery are having mild urinary incontinence. Weak pelvic floor muscles and weak abdominal muscles can be the reason for urinary incontinence.

Fatigue of the pelvic floor muscle might be the reason why urinary incontinence happen. After the surgery there is weakness in the abdominal muscle, which may unable to maintain intra-abdominal pressure and in postmenopausal females there is decreased oestrogen, which affect the muscle strength. Due to weak musculature, females with incisional abdominal surgery may land up with UI problem.

According to table no. 2 which shows pelvic floor muscles strength, it contain set of 3 questions and out of 100 females, 74% of females are experience urinary incontinence while coughing sneezing like physical activity, 24% of females are having history of uterine prolapse, and 68% of females are having difficulty in holding urine. Overall result shows that 55.33% of females are having weak pelvic floor muscle, 29% of females are not having pelvic floor muscle weakness, and 15.66% of females are having moderate pelvic floor muscle weakness. Weakness in Abdominal muscles and pelvic floor muscles can cause urinary incontinence.

Table no.3 showed the core muscle strength in which we use seven different types of question related to the core muscle strength. In that out of 100 females, 54.28% of females are having weak core muscle strength, 6.2% of females are not having weak core muscle strength, and 39.42% females are having moderate core muscle strength. Ore muscle strength questions contain seven different items that is struggle with standing up straight, tend to slouch in chair, hard to stand for long time, pain after doing work, frequently feel as weak, hard to maintain single posture, and shortness of breath due to slouch posture.

Table no. 4 contain questions related to the core muscle endurance out of 100 females, 85% females are having weak core muscle endurance, 5% of females are not having weak core muscle endurance, and 10% of females are having moderate core muscle endurance. Questionnaire contains two different items about the core muscle that is easily fatigue after doing any type of work, and reducing working capacity due to any type of pain in different region. Percentage of females with different type of surgery out of 100%, 41% of females are with C-section (caesarean delivery), 35% of females are with hysterectomy, 14% of females are with hernia, and 10% of females are with fibroid.

According to result, we can say that there is a mild prevalence of urinary incontinence in postmenopausal females with incisional abdominal surgery. Fatigue of pelvic floor muscle might be the reason why stress urinary incontinence often describe that leakage start only after some incidence such as laughing, sneezing, and coughing. Unable to maintain intra-abdominal pressure due to weak core can stress the pelvic floor muscle further. These may lead to cause stress urinary incontinence. Hence, the females with incisional surgery /with the weak core muscle could show incontinence.

Conclusion: The study showed that there is mild prevalence of Stress urinary incontinence in postmenopausal females with incisional abdominal surgery.

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