Original Research Article

Assessment of efficacy of home available reminders to aid in the adherence and effectiveness of home-based pelvic floor muscle training in the management of stress urinary incontinence

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Abstract

Background: Strengthening exercises for pelvic floor muscles (SEPFM) are considered the first approach in the treatment of stress urinary incontinence (SUI). UI has a devastating effect on women's quality of life in the physical, social, sexual and psychological spheres. Women restrict or diminish their activity and social participation, with serious implications. In SUI, there is an association between physical exertion and urinary loss. Increased intra-abdominal pressure triggered by physical exertion leads to increased intra-vesical pressure and, if it exceeds intraurethral pressure, in the absence of contraction of the detrusor muscle, the resulting urinary leakage is referred to as SUI.

Aim of the study: To identify the protocol and/or most effective training parameters in the treatment of female SUI.

Materials and methods: 100 patients with stress urinary incontinence attending the out-patient department were thoroughly evaluated and randomized into 2 groups of 50 patients each, both groups were taught Kegels exercises and instructions to perform them at home. The experimental group (A) received additional strategies to enhance the efficacy of PFME in the form of reminder bindis to be placed in areas of the home frequented by the patient like the kitchen and its appliances. Patients in the control group (B) did not receive any additional reminders. Both groups were asked to maintain an

exercise diary and allowed to continue their routine medications for comorbidities if any. They were reviewed on Day 15, Day 30 and physiotherapy sessions are given. Later on Day 90 the patients of both groups were reviewed and evaluated with a questionnaire for improvement in symptoms and adherence to PFME.

Results: Among the total 100 patients who were trained to do PFME, 23 (14 from group A and 9 from group B) were completely dry by 90 days, 51 (29 from group A and 22 from group B) patients had reduction in the leak and 26 (7 from group A and 19 from group B) patients showed no improvement. Assessment from the exercise diary showed good adherence and symptom relief in most patients in the trial group.

Conclusions: Adherence to PFME was better in the trial group in whom indigenous reminders were used which in turn translated into clinical improvement. In this time and era as PFMT is the first management modality in patients with stress and mixed incontinence implementation of such strategies to improve adherence to treatment is suggested especially in tertiary care setups.

Key words

Incontinence, Indigenous reminders, Adherence, Efficacy, Pelvic Floor Exercise.

Introduction

The International Consultation on Incontinence (ICI) has recently revised its recommendations for the initial management of urinary incontinence in women, Treatment of symptomatic stress urinary incontinence (SUI) should include assessment of estrogen status, lifestyle interventions (such as weight loss, stopping smoking and limiting caffeine intake) and supervised pelvic floor muscle training (PFMT) [1]. While the recommendation is that PFMT should be first-line therapy for SUI, it is debatable if this happens in practice [2]. Evidence suggests that surgery for women with SUI is more commonly performed in the UK than in other European countries [3]. This is despite evidence suggesting that PFMT is often the preferred option expressed by many women. In one study, approximately 60% stated that they would be prepared to perform PFMT for 6 months but fewer would wish to do this for life and only a small percentage would want drugs for life or a major operation [4]. Pelvic floor muscle exercises (PFME) are strongly recommended for the management of all types of urinary incontinence, but to be effective they require adherence [5]. Systematic reviews have shown that more intensive and supervised programs are more effective for treating urinary incontinence than non-supervised programs. However, some trials have found similar results for both supervised and non-supervised interventions. The non-supervised, home-based practice of PFME would be ideal for women who find it difficult to go to treatment centers [6]. Adherence is an important aspect of the home-based practice of PFME to treat urinary incontinence. Adherence is defined as the extent to which a person's behavior corresponds with agreed recommendations from a healthcare provider [7].

Materials and methods

A two-arm, parallel, randomized, controlled trial with intention-to-treat analysis was conducted in Department of Urogynecology, ISO-KGH, Chennai in the year 2018. Totally 100 patients were included in the study. The experimental group (A) received additional strategies to enhance the efficacy of PFME in the form of reminder bindis to be placed in areas of the home frequented by the patient like the kitchen and its appliances. Patients in the control group (B) did not receive any additional reminders. Both groups were asked to maintain an exercise diary and allowed to continue their routine medications for comorbidities if any. They were reviewed on Day 15, Day 30 and physiotherapy sessions are

given. Later on Day 90 the patients of both groups were reviewed and evaluated with a questionnaire for improvement in symptoms and adherence to PDF. The trial included women aged > 18 years, with symptoms of urinary incontinence and good cognitive functioning. Exclusion criteria were: pregnancy or postpartum period (<6 months after delivery), virginity, illiteracy, any observed vaginal prolapse, any urogenital infection, women unable to contract their pelvic floor muscles, vaginal atrophy, and any systemic disorder, including diagnosed cancer or neurological diseases. All the PFMT sessions were given by an experienced urogynecologist to all the participants. The participants were taught breathing and body awareness exercises in front of a mirror to help locate the pelvic floor muscles and to practice pelvic movements; instruction of PFME during vaginal palpation; discussion of factors associated with urinary incontinence, bladder hygiene, and how to deal with them; and training to contract the pelvic floor muscles before situations that increase intra-abdominal pressure (known as the 'knack'). The socio-demographic and clinical variables were obtained for analysis which includes - age, marital status, education level, income, ethnicity, perceived health status, smoking status, physical activity during leisure time, and sexual activity with a partner. The clinical variables were parity, body mass index, comorbidities, menopause management, gynecological surgery, pelvic floor muscle strength, pelvic floor muscle endurance, type of urinary incontinence, frequency of urinary incontinence and amount of urinary incontinence.

Results

Adherence to PFME at Day 15, 30 and 90 were assessed using a questionnaire which assessed time spent practicing PFME, a number of contractions performed, and patient satisfaction level of self adherence. The exercise diary was assessed with a number of days, number of contractions, number of involuntary stress and urgency leaks. The pelvic floor palpated vaginally and ability to sustain contractions (**Table – 1, 2**).

Discussion

This trial assessed the effect of adding a theory-based strategy to enhance self-efficacy in home-based PFME for women with urinary incontinence. It was hypothesized that women who received the extra intervention to improve self-efficacy – consisting of a reminder bindi, and discussing and registering treatment achievements and goals (performance accomplishments) – would be more adherent to home-based PFME than women that received only the conventional physiotherapeutic approach focusing on exercise mastery [8]. The trial group which was given pelvic floor muscle training along with indigenous reminders were found to have the better average number of days of exercise (7 days when compared to 5 days in the control group) which remained consistent even on the long term Day 90 of the trial [9]. The adherence assessed by a tailor-made questionnaire was better in the trial group than the control group (the average score: 18.2 vs. 12.7) and the long term outcome was 20.8 [10]. Though the outcomes in both groups were better in the long term, the scores were much higher in the trial group showing the role of reminders in improving adherence [11]. The trial group patients had better satisfaction when compared to the control group which can be attributed to better adherence (95% vs 60% on Day 90). The pelvic floor muscle strength that was assessed during every review improve significantly in the trial group (average score 2 on Day 15 to score 4 on Day 90) but there wasn't any significant improvement in the control group.14 out of 50 patients in the trial group were completely dry with no involuntary urine leak by the end of the study and 29 patients had a reduction of complaints which were significantly higher when compared to the control group [12]. Our study was conducted to find out the efficacy of using indigenous remainders to help in improving the adherence and in turn the outcomes of PFME. The results obtained from this study shows

significant adherence and better outcomes with the use of such reminders [13]. However since the sample size of each group is small, the outcomes in a larger population are yet to be determined [14, 15].

Table - 1: Clinical characteristics.

CHARACTERISTICS	GROUP A	GROUP B
Parity, n (%)		
nulliparous	3	4
primiparous	13	2
multiparous (2 to 3 deliveries)	32	40
multiparous (4 to 8 deliveries)	2	4
Body mass index, n (%)		
normal	15	21
overweight	30	24
obese	5	5
Comorbidities, n (%)		
diabetes	12	20
hypertension	9	11
asthma	6	3
constipation	4	1
Menopause	14	14
PFM strength (0 to 5) n (%)		
1 - flicker	16	10
2 – weak	13	22
3 - moderate	11	10
4 - good	10	8
PFM endurance n (%)		
1 to 3	11	13
4 to 6	9	27
7 to 10	30	13
UI classification, n (%)		
stress	41	36
urgency	5	4
mixed	4	10
Frequency of UI, n (%)		
1/wk	26	21
2 to 3/wk	13	15
1/day	11	14
more than 1/d 19	-	-
Amount of urine leakage, n (%)		
small	32	29
moderate	15	20
large	3	1
Medication use, n (%)		
hormone replacement	1	-
topical hormone in vagina	6	3

medication for urge UI	11	13
Gynecological surgery, n (%)		
hysterectomy	18	12
oophorectomy	6	4

Table - 2: Outcomes.

Outcomes (in average)	**Groups**					
	Day15		**Day 30**		**Day 90**	
	A	**B**	**A**	**B**	**A**	**B**
Exercise days per week	7	5	7	7	7	5
Adherence (2-21)	18.2	12.7	19.3	13	20.8	16
Satisfaction of adherence/efficacy (%)	60	42	73	52	95	60
Pfm strength (1-5)	2	3	3	2	4	3
Icq-sf questionnaire –increase in score	3	3	5	3	5	3

Conclusion

SEPFM combined with digital palpation, biofeedback, and vaginal cones, as well as 12-week duration training parameters, with ten repetitions per series and in distinct positions seemed more effective to reduce the amount of urine leakage, also providing a subjective perception of cure compared with SEPFM alone or a lack of treatment. The limited number of studies and the heterogeneity of the intervention protocols did not allow us to identify the most effective PFM training protocol. Pelvic floor muscle exercises are recommended in the management of all types of urinary incontinence but, to be effective, they require adherence. The use of indigenous reminders such as bindis is cost-effective measures in improving adherence.

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