

## Effects of Kegel exercises for the management of pelvic floor muscles weakness after episiotomy

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**Objective:** To evaluate effectiveness of Kegel exercises for management of post-episiotomy weak pelvic floor musculature.

**Methodology:** This experimental trial conducted at National Hospital, Faisalabad, included 45 women with diagnosed pelvic floor muscles (PFM) weakness after episiotomy. Subjects were pre-instructed to perform Kegel exercises according to given protocol. Outcome measures were pain intensity and strength of PFM; assessed by visual analogue scale (VAS) and vaginal digital examination along with modified oxford grading scoring system, respectively.

**Results:** Out of 45 women, 19 (42.2%) had complaint of pain and urinary incontinence. By

applying Friedman test, the median pain score was 5.00 before intervention while it was reduced to 3.00 after 3 weeks of performing exercises. The median manual muscle testing (MMT) score was 2.00 before intervention, but it remains 2.00 after 3 weeks. Patients showed better results for pain ( $p=0.000$ ) and for pelvic muscles strength ( $p=0.000$ ).

**Conclusion:** Kegel exercises are simple and cost-efficient method as they relieved patient's pain and improved incontinence. They helped in improving pain after episiotomy therefore they should be included in post-natal patient care program. (Rawal Med J 202;45:830-833).

**Key Words:** Kegel exercises, pelvic floor muscles, visual analogue scale.

## INTRODUCTION

Episiotomy is a common operation in obstetrics. Perineal pain is mostly the utmost drawback of episiotomy that collectively causes mental and physical discomfort for mothers. Pain reduction due to continuous use of analgesics cause unwanted side effects which has attracted the attention of both physicians and scientists.<sup>1</sup> Prevalence rate of episiotomy is greater in Asian women because of contrast in the anatomy and elasticity of their pelvic floor muscle as compared to other races.<sup>2</sup>

Episiotomies are associated with slow recovery of pelvic floor muscles strength than is experienced with either an intact perineum after delivery or perineal lacerations. Complications after episiotomy may include urine incontinence, sexual dysfunction, pelvic organ prolapsed, rectal hemorrhage and massive vulvar hematoma. First vaginal delivery was major risk factor for incontinence, and subsequent deliveries had less effect.<sup>3</sup>

During normal vaginal delivery (NVD), pelvic floor muscles especially the puborectal muscles are stretched proportionally to head of fetus so that fetus

can pass through during 2<sup>nd</sup> stage of labor and length of the puborectal muscle was more than the double, resulting in stretch related injury.<sup>4</sup> A recent 3D stimulation model shows that if fetus head and neck are extended instead of flexed, during the 2<sup>nd</sup> stage of labor the stress on puborectal muscle becomes even more.<sup>5</sup> Levator ani defects are common after episiotomy (15-35%).<sup>6</sup> Modified Oxford grading system has been graded as a valid and reliable assessment tool for PFM assessment.<sup>7</sup> Analgesics, epidural analgesia and local anesthetics have been used to relieve pain.<sup>8,9</sup>

Kegel Exercises is a set of pelvic floor exercises that help to tone up PFM, strengthen them and thus prevent its dysfunctions like pelvic organ prolapse and urine incontinence. They help improve bladder or bowel control.<sup>10</sup> Perineal massage and Kegel exercises are vital in keeping the integrity of perineal area remarkably after episiotomy, which is increasing used.<sup>11</sup> Little evidence is available related to effects of Kegel exercise therapy as a safe, cost-effective and home-based treatment. The purpose of the study was to evaluate the effects of Kegel exercises on PFM to reduce pain and improve

incontinence after episiotomy and to increase awareness among women about the importance of exercises to regain the lost strength post-natally.

## METHODOLOGY

This Quasi experimental study was conducted at National Hospital, Faisalabad over period of 9 months. Online Sample size calculator was used to calculate the sample size, keeping;  $\alpha$  (level of significance) = 0.05,  $1-\beta$  error (power of test) = 0.90. Sample size of 45 participants was calculated. Subjects were recruited by convenient sampling, having age range of 18-45 years, diagnosed PFM weakness post-episiotomy with complaints of urine incontinence and pain. Pregnant females, patients with history of tuberculosis, carcinoma, and local infection of urogenital tract are excluded. All participants gave written informed consent. Patients were taught to perform Kegel exercises along with routine physiotherapy treatment like using TENS. They were asked to begin Kegel exercises by emptying bladder, tighten the PFM and hold for a count of 10 then relax the muscles completely for a count of 10. Do 20 repetitions, 3 times a day.

Evaluation was made at baseline and at weeks 1, 2 and 3. outcome measures were pain and strength of PFM. Pain was assessed by VAS and PFM strength was assessed by vaginal digital examination with 2 fingers along with modified Oxford grading scoring system from grade 0-3 was used for assessment of strength of perineal muscles due to 3 weeks follow up and data was collected accordingly. MMT score was assessed by placing index and the middle fingers in the vagina and asking the patient to squeeze the pelvic muscles around fingers. According to which strength of muscles was graded as absent, weak, normal and strong. Questionnaire Urinary Incontinence Diagnosis (QUID) is a 6-item urinary incontinence symptom questionnaire used to assess level of urinary incontinence.

**Statistical Analysis:** The quantitative data is presented as median and interquartile ranges while qualitative as frequencies and percentages. Friedman test was applied to see significance of study population over different follow-ups.  $p < 0.05$  was considered significant.

## RESULTS

Out of 45 patients, 23(51.1%) were 26-30 years old, 15(13.3%) were less than 25 years old & 7(15.6%) were above 30 years (Table 1). Among them, 35(77.8%) had undergone medio-lateral episiotomy while 10(22.2%) undergone median episiotomy. Twenty-three (51.1%) females were multiparous and 22(48.9%) nulliparous. Out of them, 26(57.8%) reported no problem of urine incontinence while 19(42.2%) reported urine incontinence.

**Table 1. Baseline characteristics of study population.**

|        | N  | Mean    | Std. Deviation | Std. Error Mean |
|--------|----|---------|----------------|-----------------|
| Age    | 45 | 26.87   | 4.077          | 0.608           |
| Height | 45 | 62.53   | 3.259          | 0.486           |
| Weight | 45 | 69.87   | 5.922          | 0.883           |
| BMI    | 45 | 27.7796 | 2.52805        | 0.37686         |
| VAS    | 45 | 4.56    | 1.099          | 0.164           |
| MMT    | 45 | 1.71    | 0.589          | 0.088           |

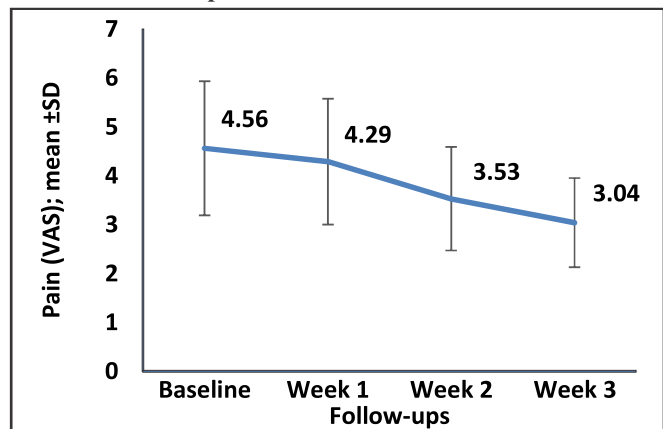
\*VAS= Visual Analogue Scale \*BMI=Body Mass Index

**Table 2. Comparison of different parameters over different follow-ups.**

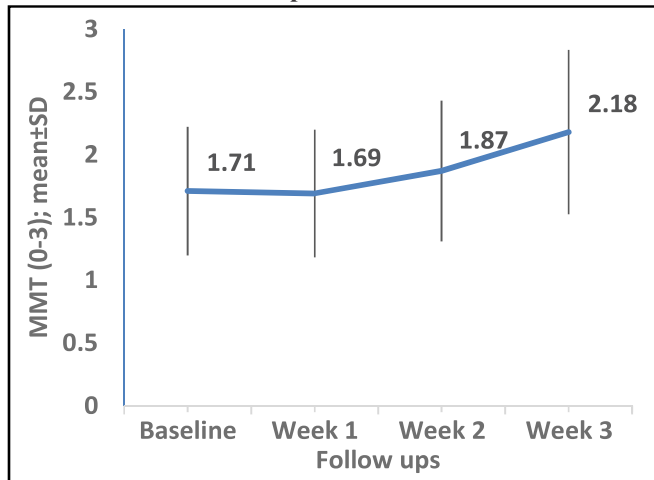
| Outcome measures      | Baseline | End of 1 <sup>st</sup> week | End of 2 <sup>nd</sup> week | End of 3 <sup>rd</sup> week | p-value |
|-----------------------|----------|-----------------------------|-----------------------------|-----------------------------|---------|
| Pain (VAS)            | Median   | 5                           | 4                           | 3                           | 0.000   |
|                       | IQR      | 1                           | 1                           | 2                           |         |
| Muscle strength (MMT) | Median   | 2                           | 2                           | 2                           | 0.000   |
|                       | IQR      | 1                           | 1                           | 1                           |         |

\*VAS= visual analogue scale \*IQR= interquartile range  
\*MMT= manual muscle testing \*IQR=Q3-Q1

**Fig. 1. Comparison of medians of pain score using VAS at different follow-ups.**



**Fig. 2. Comparison of medians of manual muscle testing score at different follow-ups.**



MMT grade just after delivery was 2 in 26(57.8%) patients. While among patients with urinary incontinence, 16(35.6%) had PFM weakness in grade 1. MMT score when assessed after 3 weeks follow up 25(55.6%) females had strength of PFM in grade 2, 14(31.1%) in grade 3 while 6(13.3%) in grade 1. Median value for MMT at baseline was 2.00 while it remains same after 3 weeks (Table 1). After exercises, pain decreased (Fig. 1) and muscle strength increased (Fig. 2).

Baseline pain score was 4 in 13(28.9%) females & 5 in the similar number of patients, 9(20%) females had score 3 and same number of patients had score 6, only 1 (2.2%) female reported pain score 7. Pain score was assessed after every week in follow up after 3 weeks it was 3 in 12 (26.7%) females, 4 in 10 (22.2%) females, 1 in 9 (20%) females, 5 in 8 (17.8%) females, and 2 in 6 (13.3%) females. Median score of pain at baseline was 5.00 and it was reduced to 3.00 after 3 weeks of performing Kegel exercises (Table 2). After applying Friedman test, p-values for pain and pelvic muscle strength were found to be statistically significant ( $p=0.000$ ,  $p=0.000$  respectively).

## DISCUSSION

A cohort study on primiparous women revealed that there was no prominent association among regular PFM training before and during pregnancy, third-degree and fourth-degree perineal laceration, vacuum or forceps delivery, episiotomy and acute caesarean

delivery.<sup>12</sup> An RCT from Norway showed that pelvic floor muscles training (PFMT) was without adverse effects and could be used as treatment for prolapse.<sup>13</sup> A Turkish RCT study showed that PFM strength was greatly reduced in patients who had given birth vaginally than who had cesarean sections. Another study from Norway had similar results.<sup>14</sup>

An RCT reported that PFMT was shown to improve quality of daily activities and sexual function in females with stress incontinence, there was a significant ( $p<0.01$ ) reduction in number of females having problems in sexual, social and physical activity in intervention group after 6 months of exercises.<sup>15</sup> An experimental study done to compare postpartum perineometer readings of an interventional group receiving a prenatal teaching program for use of Kegel exercises with a control group to whom no training session was given, significant readings ( $t=4.07$ ;  $P<0.01$ ) were found for the interventional group who are offered prenatal program of Kegel exercises.<sup>16</sup>

Pelvic floor exercises should be included in every woman's fitness regimen. Health care workers, health professional, and fitness persons should need to ask detailed questions about pelvic floor function to women, ask them to perform these, and encourage attaining medical help for their dysfunctions and irregularities. That's the only way to decrease the magnitude and prevalence of pelvic floor muscle dysfunctions by giving attention when needed.

## CONCLUSION

Study concluded that Kegel exercises were successful treatment for management of pelvic floor muscles weakness after episiotomy. They are effective in terms of patient's relief of pain, and improvement of urine incontinence.

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