

## MID-TERM FOLLOW-UP AFTER SUPERVISED PELVIC FLOOR MUSCLE TRAINING FOR PELVIC ORGAN PROLAPSE PATIENTS

### Hypothesis / aims of study

Pelvic floor muscle training (PFMT) for pelvic organ prolapse (POP) patients is recommended by International Continence Society (Grade B). Several studies have reported PFMT to be effective with strengthened pelvic floor muscle, elevated the descent of organs, improved urogenital symptoms and quality of life (QOL) in POP women. However, they focused mainly on short-term effectiveness of PFMT from 3 months to 6 months. One multicenter randomized controlled trial demonstrated that POP symptoms improved significantly in PFMT intervention group at 6 months, but no significant difference was observed in some symptoms 12 months after intensive PFMT<sup>1</sup>). The long-term studies among urinary incontinence patients have shown that benefits of PFMT progressively declined over time despite initial success of PFMT. That might be due to lower adherence rate to the training in long-term. Therefore, it is possible that POP patients perform PFMT less frequently and lower effectiveness in long-term following supervised PFMT. The aim of this study was to investigate the current health condition and adherence to PFMT after 4-month supervised PFMT for POP.

### Study design, materials and methods

Twenty-nine stage II or III POP women who completed PFMT were invited into this follow-up study to determine current health condition and adherence to a home-based PFMT. Main outcome measures included pelvic organ prolapse quantification system (POP-Q), prolapse-quality of life (P-QOL), adherence to PFMT, PFMT obstacles and the place to do PFMT. An urologist evaluated the prolapse status of all participants with POP-Q. Participants were asked the frequency of PFMT to assess adherence. PFMT at least 4 times per week were defined as positive PFMT habits in this study. P-QOL was assessed at 3 time points as follow: before PFMT and immediately after PFMT with one-on-one session, and at 2 to 2.5 year follow-up with phone call. The non-parametric Friedman test with Steel-Dwass post-hoc test was conducted to determine statistical differences for POP-Q, 18 items of symptoms and 9 domains of QOL in P-QOL among 3 points. Values of  $p < 0.05$  were considered significant.

### Results

Of those participated, 26 participants were completed all assessment in follow-up study (89.7%). Seven women have undergone surgery after intensive PFMT, and remaining 19 women were included in the statistical analysis. The mean age was 64.3 years (range, 50-75), BMI was  $24.1 \pm 3.4$ , POP stage (II: 11, III: 8), and type of POP was anterior vaginal wall prolapse. 47.4% of patients continued to perform PFMT at least 4 times per week 2 - 2.5 years after intensive PFMT. POP-Q C was significantly elevated after PFMT compared to before. In 18 items of symptom scores, 5 items had significant differences by Friedman test. Multiple comparisons showed significant differences in increased daytime urinary frequency before and after PFMT, and defecation frequency before PFMT and follow-up as well as after and follow-up (Fig. 1). Although 7 domains had significant differences by Friedman test, multiple comparison revealed significant intergroup differences only in Emotions and Severity measures before PFMT compared to after (Fig.2). General health was significantly worsened at follow-up compared to immediately after supervised PFMT. Participants reported "Difficult to remember time to do PFMT" (52.6%), "Perceived PFMT did not help ease symptoms" (26.3%), "Unsure if doing PFMT properly" (21.1%), "Difficult to find time to do PFMT" (15.8%), "No need to continue PFMT due to improved symptoms" (15.8%) and "Ceased PFMT because of pain" (0.0%) as obstacles to stay with training. The places to do PFMT in their daily life included bedroom (63.2%), sitting room (31.6%) and outdoor locations (31.6%).

### Interpretation of results

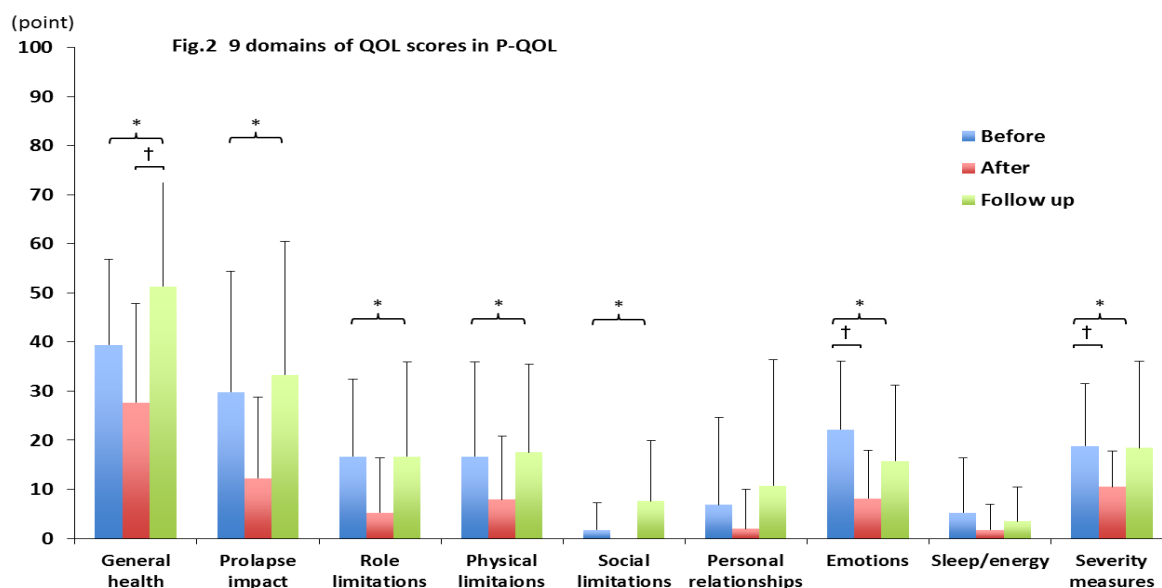
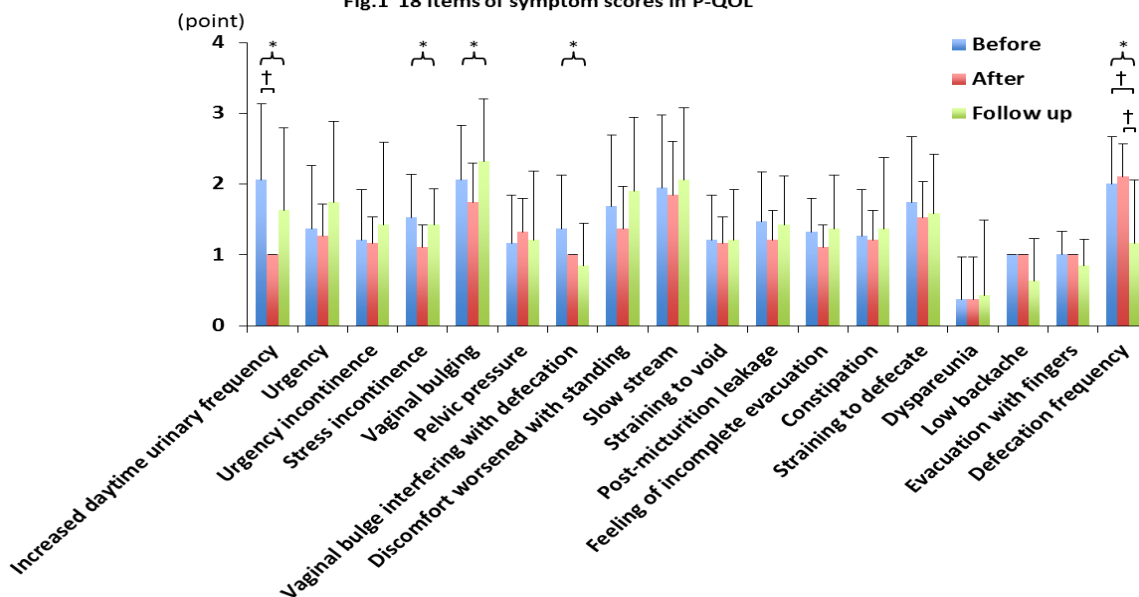
This is the first study that objectively determined consequences of intensive PFMT cessation for POP patients in mid-term. We focused on current health status and adherence to PFMT at 2 to 2.5 year follow-up after supervised PFMT. Whereas 47.4% participants continued PFMT more than 4 days per week as a home-based training, almost of them ceased prescribed PFMT during intensive intervention. This finding was consistent with previous report that although the adherence to PFMT relatively maintained 6 to 12 months, decreased in long-term among stress urinary incontinence (SUI) patients.

To our knowledge, there have been very few studies that focused on QOL in long-term among patients with pelvic floor dysfunction. We found that Emotions and Severity measures improved significantly before and after PFMT, and did not change significantly at follow-up compared to after PFMT. Only General health aggravated significantly at follow-up compared to after PFMT out of 9 domains in P-QOL scores. In short-term study, a high rate of improvement of urogenital symptoms and QOL has been obtained for POP patients. Also, the benefits of PFMT diminished over time when adherence to the training did not sustain<sup>2</sup>). However, the result of present study showed that POP-Q, urogenital symptoms and most of the QOL domains did not change significantly after intensive PFMT at least after 2 years. Thus, regular PFMT appears to help prevent the health condition from deteriorating further in mid-term.

Moreover, PFMT has been obstructed due to difficulty in remembering PFMT in their daily life following supervised intervention in 52.6% women. A study investigating PFMT barriers in SUI pointed out that difficulty in remembering and finding time to exercise

persisted as predictors of PFMT adherence<sup>3</sup>). Conceivably, reminders and behavioral modification may help avoid forgetfulness to do PFMT. Medical staff should get more involved in conservative intervention to support patients over time.

Fig.1 18 items of symptom scores in P-QOL



(Friedman test \*:  $p < 0.05$ , Steel-Dwass †:  $p < 0.05$ , mean  $\pm$  SD)

### Concluding message

We showed that whereas adherence to PFMT in POP patients declined gradually, urogenital and QOL still maintained in mid-term follow-up after supervised PFMT.

### References

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### Disclosures

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