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DOES PELVIC FLOOR MUSCLE EXERCISES ADDING ON EFFECTS ON OVERACTIVE BLADDER PATIENTS WITH UNSATISFACTORY DRUG RESPONSES?

Hypothesis / aims of study
The purpose of the study was to examine the effects of adding pelvic floor muscle exercise (PFME) on overactive bladder (OAB) patients with unsatisfactory drug therapeutic effects.

Study design, materials and methods
Eligible clinical diagnosed OAB participants who have had at least three-month drug treatment were recruited and randomly assigned to the combined treatment or the drug alone treatment group. The drug alone group was solely given the routine drug treatment, while the subjects in the combined treatment group received a perineal surface electromyography assisted PFME in addition to the drug treatment. The PFME program was implemented and taught, instructing the participants to perform 15 PFM contractions per set, 3 sets a day, continuously at home for 8 weeks. A 3-day voiding diary, the Benefit, Satisfaction, and Willingness questionnaire, and the Overactive Bladder questionnaire were used to measure the comparative effectiveness between the two groups.

Results
From the total 29 participants who completed the study, 14 were in the drug alone group and 15 were in the combined group. The mean ages of the two groups were 72.86 ± 7.59 and 69.23 ± 11.58 years old, respectively. No significant differences in the demographic data were found between the two groups. After 8 weeks, the urgency episodes per 24 hours, daytime frequency per 24 hours, and episode of urge urinary incontinence per 24 hours in the combined treatment group were significantly reduced but there was no significant reduction in the nocturia episodes per 24 hours and mean voiding volume. There was significant difference between the combined group and the drug alone group in the change percentage of urgency (-80.07% vs. -10.31%, p = .042) and daytime frequency (-10.72% vs. +4.94%, p = .044). There was no significant difference between the two groups in the treatment satisfaction, and treatment willingness. Significant differences were reported between the two groups in the benefit of the treatment after 4 weeks post-treatment. The treatment benefit was 73.3% in the combined group and 28.6% in the drug alone group (p = .027). Additionally, there were significant reductions in the symptom bothersome score and significant increases in health-related quality of life among the two groups. Scores in the symptom bothersome domain was reduced by 42.63% in the combined group (p = .004) and by 38.82% in the drug alone group (p = .039). Scores in the concern and sleeping domain in the quality of life significantly gained a 58.71% and 45.85% increase in the combined group (p = .025 and p = .048), and scores in the coping domain significantly gained a 34.27% increase in the drug alone group (p = .006). Overall, the total score in the quality of life was significantly improved in the combined group and the drug alone group with an increase of 20.61% (p = .011) and 15.17% (p = .019), respectively. But, there was no significant difference in any OAB-q scores of change percentage between the two groups.

Interpretation of results
This study demonstrated that incorporating the pelvic floor muscle exercise program into the treatment of OAB patients with unsatisfactory therapeutic effects could reduce urgency, daytime frequency, and urge urinary incontinence symptoms, and increase subjective treatment benefits. However, there was no significant difference between the combined group and the drug alone group in the change percentages of urge urinary incontinence episodes, symptom bothersome and scores in the quality of life.

Concluding message
The result of this study supported that pelvic floor muscle exercise program have additional effects on OAB patients with unsatisfactory therapeutic effects in reducing urgency, daytime frequency, and urge urinary incontinence symptoms, and increase subjective treatment benefits. No significant differences in the change percentages of urge urinary incontinence episodes, symptom bothersome and scores in the quality of life and needed further investigation.

References
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Is this study registered in a public clinical trials registry?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**Ethics Committee in National Cheng Kung University Hospital , Taiwan**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**