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PATIENT PREFERENCE, SAFETY AND EFFICACY OF MIRABEGRON VERSUS SOLIFENACIN IN PATIENTS WITH PELVIC ORGAN PROLAPSE AND OVERACTIVE BLADDER: A RANDOMIZED CROSSOVER PILOT STUDY

Hypothesis / aims of study

Pelvic organ prolapse (POP) is often associated with both overactive bladder (OAB) and voiding dysfunction. Antimuscarinic agents have been the mainstay of pharmacotherapy for OAB, but this may change with the newly developed beta3-adrenoceptor agonists. With less adverse effects such as dry mouth, constipation, and voiding difficulty, beta3-adrenoceptor agonists are expected to become the preferred option. In OAB patients with POP, reduced efficacy of antimuscarinic agents was reported in one study (1), and the efficacy and safety of beta3-adrenoceptor agonists has not yet been investigated. Our study aimed to compare patient preference, safety, and efficacy of mirabegron, a beta3-adrenoceptor agonist, against solifenacin, an antimuscarinic agent, using a crossover design in OAB patients with POP.

Study design, materials and methods

Patients with POP (cystocele: stage II or III) and OAB were randomly assigned to two groups using the envelope method. In Group M-S, we administered daily doses of mirabegron (50 mg) for 8 weeks with a 2-week washout period followed by daily doses of solifenacin (5 mg) for 8 weeks. This order of drug administration was reversed in Group S-M. Patient preference was assessed by a questionnaire at the end of the two treatment periods and reasons for preference were analyzed. Patients recorded overactive bladder symptom score (OABSS), 2-day frequency volume charts, and visual analog scales (VAS) of dry mouth and constipation at the 0, 8, 10, and 18 week mark. Postvoid residual (PVR) volume was also assessed at each point. All values were expressed using the mean \pm SD. Mann-Whitney U test, Chi-square test, and Wilcoxon matched-pairs signed rank test were used to analyze statistical significance. Differences were considered to be significant at $p < 0.05$.

Results

We enrolled a total of 32 patients with OAB and POP and 25 patients completed both treatments. Patient demographics and other baseline characteristics between Group M-S ($n=12$, mean age 74.2 ± 6.0) and S-M ($n=13$, mean age 73.5 ± 5.2) showed no statistically significant differences. Significantly more patients preferred mirabegron (60%) over solifenacin (16%); 24% expressed no preference. The main reasons given for preferring mirabegron were the lack of adverse effects which presented with solifenacin in 60%, better subjective efficacy in 20%, and both of them in 20% (Notable adverse effects of solifenacin were; dry mouth, constipation, voiding difficulty, and abdominal fullness). The main reason for preferring solifenacin was better subjective efficacy. Solifenacin significantly increased PVR volume (18.0 ± 39.0 ml vs. 59.0 ± 98.9 ml), but mirabegron did not (44.2 ± 79.2 ml vs. 24.6 ± 49.3 ml). There were no cases of urinary retention. Both VAS (0-100) of dry mouth and constipation significantly increased after solifenacin administration (dry mouth 9.8 ± 17.1 vs. 36.4 ± 31.9 , constipation 5.8 ± 13.1 vs. 24.2 ± 29.9), but not after mirabegron administration (dry mouth 18.9 ± 30.8 vs. 14.9 ± 19.3 , constipation 16.3 ± 25.5 vs. 17.2 ± 27.6). We observed no carryover effects; but there were period effects in the OABSS total scores and the data of frequency volume charts so we compared the drug effects using only data from the preceding administration. Mirabegron administration significantly improved the OABSS total scores, the urinary frequency per 24hr, and voided volume per micturition at week 8. Solifenacin administration significantly improved all these variables and the number of nocturia episodes per night at week 8. No significant difference was found in drug effects between mirabegron and solifenacin.

Interpretation of results

Significantly more OAB patients with POP preferred mirabegron (50 mg/day) over solifenacin (5 mg/day). Although there was no significant difference in efficacy, PVR volume and VAS of dry mouth and constipation were significantly increased by solifenacin as part of its antimuscarinic effects but were notably not increased with mirabegron.

Concluding message

A beta3-adrenoceptor agonist, mirabegron, showed significant patient preference over an antimuscarinic agent, solifenacin, in OAB patients with POP. As women are more susceptible to dry mouth and constipation, and POP tends to cause voiding dysfunction, beta3-adrenoceptor agonists may be considered as a first-line pharmacotherapy without antimuscarinic adverse effects in OAB patients with POP.

References

1. Salvatore S et al. BJOG 114:1436-8, 2007.

Disclosures

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