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COMPARISON OF THE EFFICACY, SAFETY, AND TOLERABILITY OF SOLIFENACIN AND PROPIVERINE FOR THE TREATMENT OF OVERACTIVE BLADDER

Hypothesis / aims of study
For pharmacological treatment of overactive bladder (OAB), antimuscarinic agents have long been the drugs of choice. However, these agents can have unpleasant side effects, such as dry mouth, constipation, headache, blurred vision, and tachycardia, while the lower urinary tract symptoms of some patients are refractory. Propiverine has a non-selective antimuscarinic action and is also a calcium antagonist; it has been widely used in Japan and Europe for over 10 years. Solifenacin is a newly developed antimuscaric drug for the treatment of OAB, and it shows selectivity for M3 and M1 muscarinic receptor subtypes. The aim of the present study was to compare the effects of solifenacin and propiverine for the treatment of overactive bladder, in a prospective, single-blinded, randomized cross-over study.
Study design, materials and methods
A total of 56 patients with OAB (11 males and 45 females) who were diagnosed as OAB were randomly assigned into two groups (group 1 and 2). After observation period of 1 week, patients with group 1 were treated with solifenacin (5-10mg/day) for 8 weeks followed by propiverine (20-40mg/day) for 8 weeks, and those with group 2 were treated with propiverine for 8 weeks followed by solifenacin for 8 weeks. Lower urinary tract symptoms were assessed with overactive bladder symptom score (OABSS) [1], King's health questionnaire (KHQ) and frequency volume chart (FVC), before, and at 8 weeks and at 16 weeks after the treatment. A drug preference survey was performed in patients who completed the 16-week crossover study asking which of the two drugs received was better.
Results
Background of the two groups was comparable: group 1(n=26, 8 males and 17 females, mean age 74.3±28.9 years old) vs. group 2 (n=30, 3 males and 27 females, mean age 69.7±32.7 years old). At 8 months of treatment, 3 patients with group 1 and 10 with group 2 withdrew because of adverse events (voiding difficulty) in one patient with group1 and 3 (voiding difficulty or dry mouth) with group 2, and unknown reasons in 9 (2with group1 and 7 with group2). The therapeutic effect was assessed before, and at 8 weeks after the start of treatment in 43 patients excluding withdrawals/dropouts. Dose of solifenacin treated was 5mg and that of propiverine was 20mg in most of patients. All parameters including total OABSS, score of daytime frequency, nocturia, urgency and urgency incontinence in OABSS, as well as number of daytime and nighttime voids, number of daily urgency and number of leaks in FVC, decreased significantly in group1 (i.e., solifenacin treatment). However, nocturia score in OABSS, and number of nighttime voids, number of urgency and number of leaks in FVC did not decrease significantly in group 2 (i.e., propiverine treatment). A significant difference in the score of urgency in prefer for group 1 was noted between the two groups ($p<0.05$). In KHQ, all scores excluding those for general health perception and personal relationships decreased significantly in group1, but none of scores changed significantly in group2.
After 8 months of treatment, drugs were switched alternately. At the end of 16-weeks treatment, 7 of 21 patients with group 1 (propiverine treatment) and 4 of 20 patients with group2 (solifenacin treatment) withdrew. Total OABSS further decreased from 8 months to 16 months in group 2 ($p<0.05$), but did not change in group 1. Overall adverse events were noted 42.9% of patients, and a significant difference was noted between the two treatment groups (10.7% in the solifenacin treatment groups vs. 32.1% propiverine treatment groups, $p<0.01$). The drug preference survey showed that among 27 patients interviewed, 16 patients (59%) preferred solifenacin, 3 patients (11%) preferred propiverine, and 8 patients expressed no preference.
Interpretation of results
Based on results of OABSS, KHQ and FVC, solifenacin demonstrated better efficacy and tolerability than propiverine. Recommended dose of solifenacin was 5mg and that of propiverine was 20mg in most of patients in our study, and they did not wish to increase doses probably because they were elderly patients. At the end of treatment after the drugs were switched to the other, more than half of patients selected solifenacin as preferable.
Concluding message
Although both solifenacin and propiverine were effective, solifenacin appeared to be more effective and tolerable for the treatment of overactive bladder.

References

1. Symptom assessment tool for overactive bladder syndrome-overactive bladder symptom score. Urology 68:318-23, 2006

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Is this a clinical trial?	**Yes**
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	**The institutional review board of Dokkyo Medical University**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**