

EFFICACY OF THE BETA3-ADRENOCEPTOR AGONIST MIRABEGRON IN PATIENTS WITH STRESS URINARY INCONTINENCE.

Hypothesis / aims of study

Mirabegron was developed in Japan for overactive bladder and it is now available worldwide. Although this drug is mediated by the beta-3 receptor in the bladder, resulting in the relaxation of detrusor muscle of bladder, the effect of this drug on urethral muscles is not well known. We investigated the effects of mirabegron in patients with urinary incontinence mainly due to abdominal stress.

Study design, materials and methods

We evaluated patients with stress urinary incontinence who visited our hospital as outpatients from May 2012 to February 2013. After obtaining informed consent, the patients received one of two drugs: mirabegron(50mg/day) or clenbuterol(40 μ g/day). We used a crossover design to investigate the effects of each drug. Each drug was administered for two weeks, with a one-week washout period between each treatment. The order of drug administration was decided randomly. The International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF), Overactive Bladder Symptom Score (OABSS), and Urinary Distress Inventory-6 (UDI-6) were administered at the beginning of treatment and after each drug treatment period. A total of 11 patients were enrolled, and 10 were considered eligible.

Results

The effect of each drug on stress urinary incontinence was weak. There were no significant changes in scores after each treatment period. Five of the 10 total patients had overactive bladder accompanied by slight urgency urinary incontinence. Therefore, we divided the patients into two groups (one with only stress urinary incontinence (SUI), and the other with stress urinary incontinence (SUI) accompanied by slight urgency urinary incontinence (UUI)). There were no significant changes in scores for each medication for these groups either. We did note a significant difference in change in total score of UDI-6 in the group of SUI accompanied by slight UUI ($p=0.03$) (Figure1, 2, 3).

Interpretation of results

The efficacy of mirabegron for stress urinary incontinence was not inferior to clenbuterol. Two of 10 patients had adverse events (tremor) while using clenbuterol, while no adverse events were found with mirabegron. Furthermore, in patients with stress urinary incontinence accompanied by urgency urinary incontinence, the efficacy of mirabegron was superior to clenbuterol.

Concluding message

One limitation was the small number patients in this study. Although it is well known that severe stress urinary incontinence is difficult to treat with medication, our results demonstrate that mirabegron is not inferior to clenbuterol for stress urinary incontinence.

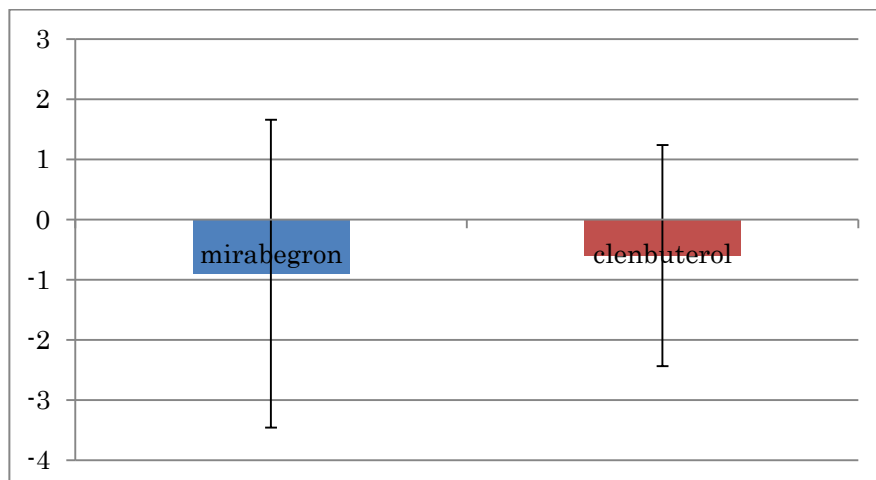


Figure 1: Change in total score of UDI-6 (All patients, n=10)

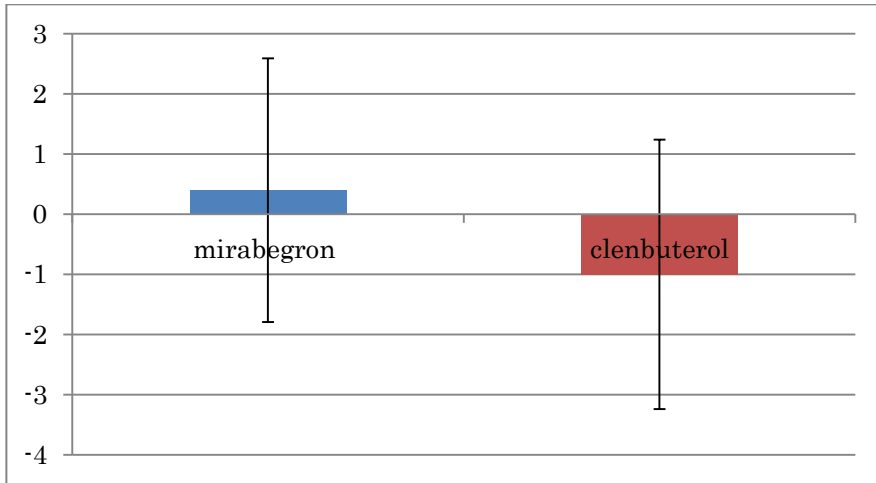


Figure2: Change in total score of UDI-6 (Only SUI, n=5)

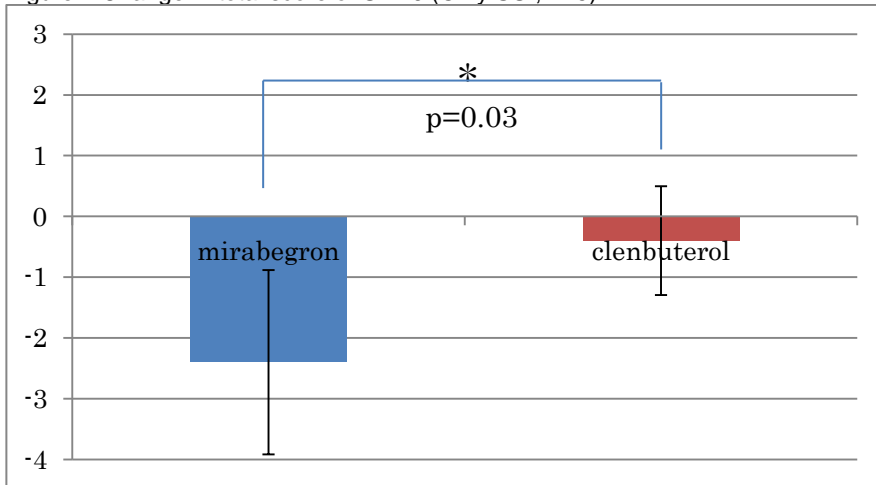


Figure3: Change in total score of UDI-6 (SUI accompanied by slight UUI, n=5) (p=0.03)

Disclosures

Funding: none **Clinical Trial:** Yes **Public Registry:** No **RCT:** No **Subjects:** HUMAN **Ethics Committee:** Ethical committee of University of Yamanashi **Helsinki:** Yes **Informed Consent:** Yes