

BETHANECHOL IN THE RESTITUTION OF THE ACONTRACTILE DETRUSOR: A PROSPECTIVE, RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED STUDY

Aims of Study

Bladder voiding disturbances due to detrusor acontractility are commonly treated with cholinergic drugs, mainly oral bethanechol. However, there are only sparse, uncontrolled and controversial data on the efficacy of bethanechol from studies performed in the 70's that do not sufficiently justify its regular use. The aim of the present study was to demonstrate the efficacy of bethanechol in the restitution of the acontractile detrusor muscle.

Methods

Sixteen patients (7 men and 9 women, mean age 62.7 years) with urinary retention or significant residual urine and cystometric evidence of detrusor hypo-/acontractility provided informed consent to be included in a prospective, randomized, placebo-controlled, double-blind study. The mean duration of the voiding disorder was 33 months. To exclude a myogenous origin of acontractility (detrusor muscle damage) that is not restorable by cholinergic drugs, intravesical electromotive administration of bethanechol was performed (J.Urol.164, 2000), and only patients with an intravesical pressure increase indicative for residual functional detrusor capacity were eligible for the study.

In a crossover design, patients were treated with bethanechol 25 mg qu.i.d. for 2 weeks, preceded or followed by a 2 weeks placebo period. Control cystometries were performed after 2 and 4 weeks. During the study period, residual urine and side effects were recorded in a voiding diary. Pre- and posttreatment residual urine, maximal detrusor pressure and urinary flow were statistically evaluated by the t-test and Wilcoxon-test.

Results

Bethanechol showed a significant reduction of residual volume and an increase of maximal urinary flow compared to placebo ($p < 0.02$ and $p < 0.03$). Furthermore, bethanechol exhibited a strong tendency to increase the maximal detrusor pressure (p values close to 5 %). Micturition was completely restituted only in cases of short-term voiding disorder, and not influenced in patients with a long history of disease. Eight patients experienced a total of 12 non-serious adverse events. No difference was observed in the incidence of adverse events between placebo and bethanechol.

Conclusions

The present results demonstrate that bethanechol is able to improve the function of the acontractile detrusor in case of a non-myogenous / neurogenic lesion. Bethanechol is effective especially in the early phases of detrusor contractility disorders. Thus, it is important to institute early cystometric evaluation and consecutive treatment with bethanechol in cases of complete or partial urinary retention.