

EFFECTS OF ORAL MAGNESIUM HYDROXIDE ON URINARY SYMPTOMS IN URGE INCONTINENT WOMEN

Hypothesis / aims of study

Urgency (U) and urge incontinence (UI) are common in women. Anticholinergic drug therapy is not universally effective for all patients. In addition, side effects, especially dry mouth and constipation, are bothersome. The effect of magnesium (Mg) ion as a smooth muscles relaxant has been used intravenously for tocolysis. Additionally its safety for oral use established as a laxative. We evaluated the role of oral Mg hydroxide as a calcium ion antagonist in the treatment of U and UI. If effective, its laxative effect will be an additional help, in UI patients usually suffering from constipation as a side effect of anticholinergic drugs.

Study design, materials and methods

A prospective, double blind, placebo controlled study was done. Sixty women with urge incontinence or mixed incontinence with predominance of urge component were enrolled. They were randomly assigned into two groups. The first group received 350 mg of Mg hydroxide orally twice a day for 4 weeks, and the second group received placebo. A urinary symptoms questionnaire completed before and after treatment by a physician unaware of the type of treatment for all cases after reviewing H&P and urinary diaries. Urinalysis, urine culture and urine cytology evaluated for all patients before and after intervention. Multichannel urodynamic studies performed for all cases before this study. After completing the study, only the subjectively improved patients (17 of total 60 cases) consented for repeating urodynamics

Results

Two groups were identical regarding to parity, degree of pelvic prolepses and urodynamic parameters before the study. Drug was well tolerated, with no significant side effects. All of the patients completed study. Bowel movements increased in most of subjects. In Mg treated group 12 of 30 cases (40%) and in placebo group 5 of 30 cases (16.7%) had subjective improvements in urgency symptoms ($p < 0.01$). In treated group number of day time micturations, nocturia and incontinence events decreased from 12.4 to 10.4 ($p < 0.01$), 1.8 to 1.3 ($p < 0.01$) and 3.2 to 2.3 ($p < 0.05$) respectively. Urodynamics in subjectively improved cases revealed that volume in first sensation increased from 163 ml to 213 ml ($p < 0.01$) in Mg group and from 177 ml to 207 ml ($p < 0.05$) in placebo group. Detrusor pressure in first sensation decreased from 9.7 to 4.0 cmH₂O in treated group ($p < 0.05$) and from 8.2 to 6.3 ($p = 0.13$) in placebo group. Other urodynamic parameters did not show a significant change in both groups.

Interpretation of results

Mg Hydroxide improved urgency and urge incontinence symptoms in UI patients along with its laxative effects. Although its relieving effect was not very prominent, it probably will be more helpful in combination with anticholinergic drugs in incomplete responders, as well as the patients complaining of constipation as an anticholinergics' side effect. Further studies with combination therapies and increased doses of Mg hydroxide seem necessary.

Concluding message

Mg Hydroxide has some beneficial effects in urgency and urge incontinence symptoms in female patients with UI.

Specify source of funding or grant	No Grant or Source for Funding
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	Human Researches Ethics Committee, Iran university of Medical Sciences
Was the Declaration of Helsinki followed?	Yes
Was informed consent obtained from the patients?	Yes