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### **Hypomagnesemia in type II diabetes: effect of a 3-month replacement therapy.**

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**OBJECTIVE**--To investigate the effects of long-term high-dose oral magnesium (Mg) therapy (30 mmol/day) in patients with type II diabetes. Low plasma magnesium levels have been reported in type II diabetes and are associated with insulin resistance and diabetic late complications. **RESEARCH DESIGN AND METHODS**--Forty patients with type II diabetes and hypomagnesemia were observed in a randomized double-blind placebo-controlled trial for 3 months (body mass index: 28 +/- 4 kg/m<sup>2</sup>; HbA1c: 7.4 +/- 0.8%). Plasma and urine magnesium and metabolic control parameters were determined, and side effects were considered, especially with regard to patients' compliance. **RESULTS**--A significant increase in plasma magnesium levels was observed after 3 months of treatment (Mg: 0.73 +/- 0.8 vs. 0.81 +/- 0.1 mmol/l), reaching magnesium levels of the control group (0.88 +/- 0.8 mmol/l; NS); metabolic control, however, was not altered (HbA1c: 7.2 +/- 0.7 vs. 7.4 +/- 0.9%). Six months after the end of the trial, plasma magnesium declined to pretreatment levels (Mg: 0.73 +/- 0.07 mmol/l). The prevalence of side effects was high at the beginning and was reduced significantly during treatment. **CONCLUSIONS**--We conclude that oral magnesium replacement therapy corrects hypomagnesemia after a minimum treatment period of 3 months. These observations might be important for the prevention of diabetic late complications.

Publication Types:

- Clinical Trial
- Randomized Controlled Trial

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