Oral magnesium supplementation improves borderline hypertension

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Dear Sir,

We read with interest the recent paper of Barbagallo et al. entitled “Oral magnesium supplementation improves vascular function in elderly diabetic patients” [1].

The authors conclude that an oral magnesium therapy positively influences brachial artery endothelial function in elderly diabetic hypertensives. In this context it is well known that endothelial function has been consistently found altered in hypertension, representing an early indicator of atherosclerosis, associated with an increased incidence of vascular diseases in this condition [2]. In this process a magnesium deficiency often occurs and can be a pathogenetic factor due to e.g. disturbed transport systems or transmembrane defects [3, 4].

Furthermore the authors describe a positive effect of an oral magnesium therapy on blood pressure (BP) lowering (systolic BP decreases from 150 + 7 to 148 + 5 mmHg and diastolic BP from 82 + 5 to 79 + 5 mmHg [1].

In a recent paper from our group we describe the similar effect of an oral magnesium therapy in blood pressure lowering in borderline hypertensive patients. We studied 18 untreated borderline hypertensives versus 35 controls under a 12–15 week supplementation with 240-500 mg magnesium orally/day. Systolic and diastolic blood pressure values of the borderline hypertensives normalized after oral magnesium administration (before therapy: 147.6 ± 8.5/87.2 ± 4.4 mmHg; after therapy: 137.2 ± 4.6/83.8 ± 3.4 mmHg, p < 0.05) [5].

In several previous studies the positive effect of a magnesium therapy on blood pressure or endothelial function has been described [6, 7].

Concerning borderline hypertension, magnesium status has not been studied in detail, yet. The data by Barbagallo et al. and our own recent results show that magnesium deficiency in borderline and mild hypertension (WHO degree I) should be corrected to normalize blood pressure values and thereby a positive effect on endothelial function can be observed consecutively.

References