

Abstract

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Status of intracellular and extracellular magnesium concentration in patients with cardiac syndrome X.

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OBJECTIVES: This study sought to clarify the differences of intracellular and extracellular magnesium levels in patients with cardiac syndrome X.

METHODS: We evaluated the intracellular and extracellular magnesium status of 22 patients with cardiac syndrome X (group A) and 22 age--and gender--matched disorder-free control subjects (group B). Levels of magnesium were determined in serum, urine, erythrocytes, and the 24-h magnesium retention rate was calculated by a magnesium loading test.

RESULTS: Group A showed a higher 24-h magnesium retention rate (49.8 +/- 1.3% vs. 32.6 +/- 7.5%, $p < 0.05$) and a lower intracellular concentration of magnesium in erythrocytes than group B (3.7 +/- 1.4 vs. 5.6 +/- 1.3 fg/cell, $p < 0.05$), demonstrating the presence of magnesium deficiency in group A. There were no significant differences in the serum concentration of magnesium between groups A and B (0.87 +/- 0.23 vs. 0.83 +/- 0.15 mmol/l).

CONCLUSIONS: This study demonstrated that the intracellular magnesium level decreased in patients with cardiac syndrome X.

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