

Abstract

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Relationship between the degree of intracellular magnesium deficiency and the frequency of chest pain in women with variant angina.

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OBJECTIVES: This study sought to clarify the relationship between the degree of intracellular magnesium deficiency and the frequency of anginal attacks in women with variant angina.

PATIENTS AND METHODS: We evaluated the intracellular and extracellular magnesium status of twelve women with variant angina: group A (≥ 4 attacks/week, $n = 5$) and group B (< 4 attacks/week, $n = 7$). Magnesium levels were determined in serum, urine, and erythrocytes, and the 24-h magnesium retention rate was calculated by magnesium loading test.

RESULTS: Group A showed a higher 24-h magnesium retention rate ($58.2 \pm 9.1\%$ vs. $31.3 \pm 4.4\%$; $p < 0.01$) and a lower intracellular concentration of magnesium in erythrocytes than group B (3.1 ± 1.1 vs. 5.0 ± 0.8 fg/cell; $p < 0.05$), demonstrating the presence of magnesium deficiency in group A. The 24-h magnesium retention rate and intracellular concentrations of magnesium in erythrocytes correlated well with the activity of variant angina ($r = 0.61$, $p < 0.01$; and $r = -0.74$, $p < 0.01$, respectively) for these patients.

CONCLUSION: This study demonstrates that the degree of intracellular magnesium deficiency in women with variant angina is closely related to the frequency of chest pain.

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