

# 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 ( $\geq 4$  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 ( $3.1 \pm 1.1$  vs.  $5.0 \pm 0.8$  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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