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## Thiamin, Selenium, and Copper Levels in Patients with Idiopathic Dilated Cardiomyopathy Taking Diuretics

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**Objective** - To analyze the association of thiamin, selenium, and copper serum levels with cardiac function in patients with idiopathic dilated cardiomyopathy using diuretics, and also to compare them with levels in control patients with no evidence of disease.

**Methods** - The study comprised 30 patients with heart disease and 30 healthy control individuals. Thiamin was analyzed by measuring the activity of erythrocytic transketolase and the effect of thiamin pyrophosphate. Selenium and copper serum levels were measured by hydride generation and flame atomic absorption spectrophotometry, respectively.

**Results** - Thiamin deficiency was observed in 10% of the control individuals and in 33% of the patients with heart disease ( $p=0.02$ ). The mean selenium and copper serum levels in control individuals and patients with heart disease were, respectively,  $73.2\pm 9.9$   $\mu\text{g/L}$  (56.5 to 94.5  $\mu\text{g/L}$ ) and  $72.3\pm 14.3$   $\mu\text{g/L}$  (35.5 to 94  $\mu\text{g/L}$ ) ( $p=0.77$ );  $1.1\pm 0.4$   $\text{mg/L}$  (0.6 to 1.8  $\text{mg/L}$ ) and  $1.2\pm 0.4$   $\text{mg/L}$  (0.6 to 2.2  $\text{mg/L}$ ) ( $p=0.27$ ). No association between the levels of these nutrients and cardiac function was observed.

**Conclusion** - Thiamin deficiency was significantly more frequent in patients with heart disease. No significant difference was observed between the mean selenium and copper serum levels in control individuals and in patients with heart disease. The results suggest possible benefits with thiamin replacement in patients taking diuretics.

**Key words:** thiamin, selenium, copper, diuretics, cardiomyopathy

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