

Tex Heart Inst J. 1984 December; 11(4): 370-376.

PMCID: PMC351712

## Carnitine Deficiency as the Possible Etiology of Idiopathic Mitral Valve Prolapse

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### Abstract

*Idiopathic mitral valve prolapse (IMVP) is a very common cardiac abnormality that may be linked to carnitine deficit (inadequate nutritional intake or absorption). One patient with IMVP and related symptoms that were resistant to drug therapy was fully studied. Free plasma carnitine and 24-hour free urine carnitine were measured twice, 10 days apart, after an overnight fast.*

**Findings:** Free plasma carnitine 23 and 28  $\mu\text{M/L}$  (our laboratory  $N=38\pm 2 \mu\text{M/L}$ ); free urine C 25 and 44  $\mu\text{M/24 hr}$  ( $N=255\pm 66 \mu\text{M/24 hr}$ ); FFA 0.88 mEq/L, Duncombe method ( $N=0.09-0.60$ ); LDL 42% ( $N = 44-65$ ); cholesterol 161 mg/dl ( $N = 180-280$ ); triglycerides 84 mg/dl ( $N = 50-172$ ); SGOT 79 MU/ml ( $N = \text{up to } 40$ ); SGPT 147 MU/ml ( $N = \text{up to } 40$ ); OCT 11.2 MU/ml ( $N = \text{up to } 10.0$ ); aldolase 11.5 MU/ml ( $N = \text{up to } 3.1$ , Bruns method). Deltoid biopsy: light microscopy showed the presence of optically empty vacuoles; electron microscopy showed lipid droplets near the subsarcolemma area and intermyofibrillar spaces. The mitochondria contained electron dense granules. The electromyogram was also abnormal.

*In a random sample of four patients with IMVP and related classic symptoms, we have found low levels of plasma and/or urinary carnitine in each case.*

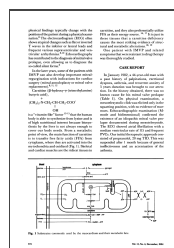
*This study may be the first step towards L-carnitine therapy for what has previously appeared to be idiopathic cardiomyopathy.*

### Full text

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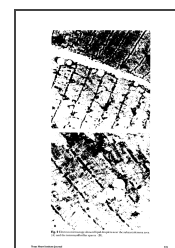
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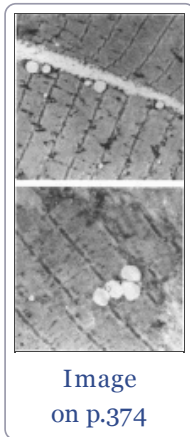


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## Images in this article



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