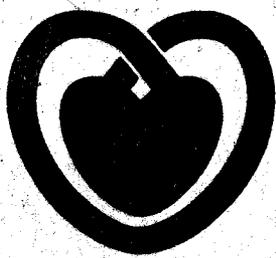


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**The treatment of perioperative ventricular systolic dysfunction with carnitine**

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**Purpose:** 1. Assessment of efficiency of the treatment with Carnitine in improvement of haemodynamic parameters and heart function indices in perioperative ventricular systolic dysfunction

2. Estimation of the impact of Carnitine intake on perioperative outcome, morbidity and mortality in ischemic and valvular ventricular systolic dysfunction.

**Materials and Methods:** 6 months randomized study on 276 patients with perioperative ventricular systolic dysfunction (group A: 138 pts. receiving 2 g of Carnitine daily; group B: 138 pts. not receiving Carnitine). Clinical and paraclinical (echocardiography, ECG, Holter ECG) parameters were assessed at 0, 14, 30 and 180 days. The statistic analysis used linear and multivariate regression, odds ratio and correlation coefficient calculation (Epi Info, SYSTAT, SPSS).

**Results:** 1. Carnitine intake resulted in improvement of left ventricular insufficiency signs and decrease of frequency of perioperative arrhythmic episodes.

2. The simple linear regression analysis showed a statistically significant relation between the duration of Carnitine intake and the increase of EF in both ventricles ( $r = 0.72$ ,  $p < 0.0001$ ), improvement of parietal motility ( $r = 0.6$ ,  $p < 0.002$ ), decrease in chamber size ( $r = 0.83$ ,  $p < 0.00001$ ) and valvular regurgitation degree ( $r = 0.65$ ,  $p < 0.001$ ).

3. Intake of Carnitine is a protection factor in patients with perioperative systolic ventricular dysfunction in respect to increase of ventricular chamber size (OR = -5), increase of diuretic treatment intake (OR = -4), decrease of ventricular EF (OR = -3) and increase of degree of valvular regurgitation (OR = -5)

4. Perioperative Carnitine intake improved the early and late (at 6 months) clinical course in operated (CABG, valvular replacement) patients with systolic ventricular dysfunction. It shortens the ICU stay with an average of 8.5 h, with a drop in the need for inotropic support. It also reduced the mortality at 6 months postoperatively with 1.6%.

**Conclusions:** 1. Intake of Carnitine in case of perioperative ventricular systolic dysfunction produces an improvement of the clinical and hemodynamic status and heart function indices.

2. There is a significant relation between total dose of Carnitine and the effect of ventricular performance increase and favoring of ventricular remodelling.

3. Intake of Carnitine in ventricular systolic dysfunction is a protection factor against ventricular dysfunction progression.

4. Perioperative Carnitine intake decreases the postoperative ICU stay, the need for inotropic support and the late (at 6 months) postoperative mortality