Protective Role of L-carnitine on Liver Functions in Patients with Hepatocellular Carcinoma Undergoing Transarterial Chemoembolization

Aly Kassem, Ali Taha, Abeer Hassan
Department of Internal Medicine, Sohag Faculty of Medicine, Egypt

**Introduction:** Transarterial chemoembolization (TACE) for hepatocellular carcinoma (HCC) is usually followed by hepatic dysfunction that limits its efficacy. L-carnitine is recently studied as hepatoprotective agent. Our aim is to evaluate the L-carnitine effects against the deterioration of liver functions after TACE.

**Method:** Fifty three patients with HCC were assigned into two groups; L-carnitine group (26 patients) who received L-carnitine 300 mg tablet twice daily from 2 weeks before to 12 weeks after TACE and control group (27 patients) without L-carnitine therapy. Twenty eight patients received branched chain amino acids granules.

**Result:** There were significant differences between L-carnitine Vs control group in mean serum albumin change from baseline to 1 week and 4 weeks after TACE ($p < 0.05$). L-Carnitine maintained Child-Pugh score at 1 week after TACE and exhibited improvement at 4 weeks after TACE ($p < 0.01$ Vs 1 week after TACE). Control group has significant Child-Pugh score deterioration from baseline to 1 week after TACE ($p < 0.05$) and 12 weeks after TACE ($p < 0.05$). There were significant differences between L-carnitine and control groups in mean Child-Pugh score change from baseline to 4 weeks ($p < 0.05$) and 12 weeks after TACE ($p < 0.05$). L-carnitine displayed improvement in (PT) from baseline to 1 week, 4 weeks ($p < 0.05$) and 12 weeks after TACE. PT in control group declined less than baseline along all follow up intervals. Total bilirubin in L-carnitine group decreased at 1 week post TACE while in control group, it significantly increased at 1 week ($p = 0.01$). ALT and C-reactive protein elevation were suppressed at 1 week after TACE in L-carnitine group. The protective effects of L-carnitine were enhanced by the use of branched chain amino acids.

**Conclusion:** L-carnitine and BCAA combination therapy offer a novel supportive strategy after TACE in patients with HCC.