

Obesity

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EFFECTS OF CURCUMIN INTAKE ON FATTY LIVER IN HIGH FAT DIET FED RATS

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BACKGROUND: Long term high fat diet (HFD) intake causes lots of metabolic disorders and a major risk factor for non-alcoholic fatty liver. Curcumin (Cur) is a well-known compound of traditional turmeric “*Curcuma longa*” which has been shown to display antioxidative, anticarcinogenic, anti-inflammatory and hypocholesterolemic effects. The aim of this study was to evaluate the effects of curcumin treatment on liver fat accumulation and prooxidant-antioxidant status in an experimental high-fat diet fed rat model.

METHODS: Male Sprague-Dawley rats were divided into four (n=8/group) groups. Group 1 (Control) was fed with control diet (10 % of total calories from fat), Group 2 (HFD) was fed with HFD (60 % of total calories from fat), Group 3 (HFD+Cur) was fed with HFD including 1g curcumin/kg HFD, Group 4 (Cur) was fed with control diet including 1g curcumin/kg. All rats were fed for 16 weeks. Liver ROS levels were measured by the flourometric method, cholesterol and trigliseride levels by commercial kits, heme oxygenase (HO-1) expression by western blotting method, malondialdehyde (MDA), dien conjugate (DC) levels and glutathione peroxidase (GPx), superoxide dismutase (SOD) and glutathione transferase (GST) activities by spectrophotometric methods, serum biochemical parameters by autoanalyzer.

RESULTS: Trigliseride levels were higher in HFD group than control group. Curcumin suplemantation with HFD significantly decreased trigliseride levels. Feeding with HFD did not show any significant differences for cholesterol, ROS and MDA levels. ROS levels were significantly lower in Cur group than control group. DC levels, SOD, GPx and GST activities and HO-1 expression were not changed.

CONCLUSIONS: Our results indicate that, curcumin treatment prevents liver against fat accumulation and has preventive effects on oxidant status but these effects are not enough strong to stimulate antioxidant status.