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The Interactive Effects of Quercetin on the Body Fat Composition and Antioxidation Activity in Rats

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The preventive effect of quercetin on 2,2-azobis (2-amidinopropane) dihydrochloride (AAPH)-induced liver damage in rats was studied. Quercetin is a typical flavonol-type flavonoid and a powerful antioxidant, which is regularly consumed by human. and onions, very famous on the major sources of quercetin, contains quercetin glycoside. It means that onion could be an natural and safe source of quercetin. Sprague-Dawley male rats were pretreated with quercetin p.o. (40ppm/kg body weight) for 9days. and the onion juice was also adapted as p. o. 50mg/kg body weight. ascorbate was used as 0.9mg/kg body weight for comparison of antioxdative effect with quercetin and onion juice. AAPH was administered i.p. at a single dose of 60mg/kg 24 hr before the animals were sacrificed. results presented here demonstrate that quercetin and onion juice treatment significantly ($p<0.05$) decreased the activity of GOT and GPT, the level of total cholesterol, triglyceride and phospholipids in plasma, and the formation of malondialdehyde in plasma and liver induced by AAPH. It also attenuated the AAPH-induced diminution of glutathione and decrease of catalase and glutathione-reductase in liver by pretreatment of quercetin and onion juice. However, there was no significant difference with AAPH-treated rats in the activity of glutathione peroxidase in liver, and the level of triglyceride in plasma.

The present findings suggest that quercetin is useful as a prophylactic agent against oxidative liver damage. Its hepatoprotective action may be related to its beneficial effect on cellular antioxidant system.