Effect of Gui-Pi-Tang on oxidative stress induced by ovariectomy in female rats

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The increase in the lipid peroxidation (LPO) level in the brain of female rats after bilateral ovariectomy, and this increase was abolished upon administration of 17β-estradiol. These results evidenced that estrogen present antioxidant activity in brain of female rats. We examined the effects of Gui-Pi-Tang (GPT), a traditional Chinese medicine, on increased LPO level in the brain of ovariectomized (OVX) rats. Ovariectomized rats were provided with a diet containing 1 %, 3 % or 5 % GPT for 12 weeks. GPT significantly decreased 1) the contents of Fe-independent and Fe-dependent LPO concentrations in cerebral cortex, striatum and hippocampus in OVX rats; 2) the differences between Fe-stimulated level of LPO and the basal level in same examined tissues.The antioxidant properties of GPT were also evaluated by studying the ability of this drug to reactive with relevant biological oxidants such as superoxide anion radical and hydroxyl radical. GPT is not good scavenger of superoxide anion. However, it reacts rapidly with OH radical with a second-order rate constant 1.10×10^{10} / M / sec. Our

results suggested that the protection against oxidative damage by GPT in the OVX rat brain may be due to its scavenging activity against free radicals.