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MEETING ABSTRACT

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Pharmacological properties of rosemary essential oil in experimental animals

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Background: Rosemary essential oil (REO) is classified as a traditional herbal medicine but additional studies are needed to complete the knowledge of its pharmacological effects. The aim of this research was to examine the influence of rosemary essential oil on pharmacological effects of diazepam and pentobarbital in experimental animals, and to examine antioxidant activity of essential oil and its hepatoprotective potential.
Methods: Pharmacodynamic experiments included pentobarbital-induced sleeping time test, while interaction with diazepam was examined by the rotarod test. Antioxidant activity of the REO was evaluated *in vitro* by the DPPH test and by determining phenolic content using the Folin–Ciocalteu reagent. The hepatoprotective effect of REO was evaluated *in vivo* in CCl_4-induced liver injury of albino Wistar rats.
Results: Seven-days pretreatment with REO significantly reduced pentobarbital-induced sleeping time, compared to the control group ($p < 0.05$), while single-dose pretreatment with REO in the dose of 20 mg/kg significantly prolonged sleeping time compared to controls ($p < 0.05$). Both doses, applied repeatedly, caused significantly longer retention of mice on the rotarod compared to controls ($p < 0.05$). The investigated essential oil exerted antioxidant activity, the IC_{50} value was 77.6 µl/ml. All biochemical parameters referring to oxidative stress induced by CCl_4 were also significantly reversed by oral administration of REO.
Discussion: Rosemary essential oil affected pharmacological properties of diazepam and pentobarbital. Beside its radical-scavenging activity it also mediates a hepatoprotective effect through activation of physiological defense mechanisms.
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