Anxiolytic effects of Carvacrol and Thymol in animal models of anxiety in mice.

M. L. FERNANDES a; F. H. C. MELO a; M. C. O. CITÓ a; L. K. X. SANTOS a; I. C. M. OLIVEIRA a; F. C. F. SOUSA a

a Department of Physiology and Pharmacology, Federal University of Ceará - UFC

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Introduction: Carvacrol is a monoterpenic phenol present in the essential oil of many plants. It is the major component of the essential oil fraction of oregano and thyme and it's always accompanied by its isomer Thymol. It's been reported that Carvacrol presented anxiolytic and antidepressant effects in mice, when administered orally. The present work was undertaken to evaluate a comparison between Carvacrol and Thymol using classical animal models of anxiety, such as elevated plus maze (EPM). Methods Carvacrol (CVC) and Thymol (THM) were administered orally at single doses of 25 and 50 mg/kg while diazepam at dose of 1 mg/kg was used as standard drug. Results: In the elevated plus maze, one way ANOVA revealed that flumazenil (2.5 mg/kg) reversed the anxiolytic effect of CVC 25 mg/kg and DZP 1 mg/kg in all parameters analyzed: (TPOA [control:47.77±7.010 ; CVC-25: 95.26±8.519 ; CVC-50: 88.45±7.414 ; CVC+FLU: 67.17±10.70; DPZ: 168.7±5.366 ]; PTOA% [control: 23.17±2.952 ; CVC-25: 45.58±3.744; CVC- 50: 43.78±3.043; CVC+FLU: 30.80±4.836; DPZ: 61.27±2.974]; NEOA [control: 3.706±0.4599; CVC-25: 8.842±0.8490; CVC-50: 7.700±0.7681; CVC+FLU: 4.700±0.4955; DPZ: 10.46±0.6466]; PEOA% [control: 31.34±3.258; CVC-25: 47.03±2.674; CVC-50: 44.11±2.649; CVC+FLU: 35.96±3.347; DPZ: 63.56±2.594]. Thymol also significantly modified the observed parameters when compared to control but flumazenil was not able to reverse anxiolytic effect of THM: TPOA [control: 47.00±14.42; THM-25: 95.45±16.12; THM-50: 133.0±17.13; THM+FLU: 147.4±10.68; DPZ: 168.7±5.366; PTOA% [control: 23.23±7.688; THM-25: 40.33±6.351; THM- 50: 49.12± 4.893; THM+FLU: 50.19±3.595; DPZ: 61.27±2.974]. NEOA [control: 4.125±0.9342; THM-25: 6.600±1.077; THM-50: 6.900±0.900; THM+FLU: 5.800±0.5538; DPZ: 10.46±0.6466 (8); PEOA% [control: 34.19±5.524 (8); THM-25: 47.36±4.743; THM-50: 52.27±2.961; THM+FLU: 48.80±0.9254; DPZ: 63.56±2.594]. Conclusion: Acute treatment with thymol at doses of 25 and 50 mg/kg seem to possess anxiolytic activity similar as carvacrol in the same doses.

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