



SCNS.03. Isorsobide dinitrate effects in a model of depressive-like behavior induced by LPS in mice

TOMAZ, V.S.¹, CORDEIRO, R.C.², MONTEIRO, I.O.³, MACÊDO, D.S.³.

¹ Departamento de Microbiologia Médica, Faculdade de Medicina, Universidade Federal do Ceará.

² Departamento de Medicina Clínica, Faculdade de Medicina, Universidade Federal do Ceará.

³ Departamento de Fisiologia e Farmacologia, Faculdade de Medicina, Universidade Federal do Ceará

Introduction: Isosorbide dinitrate (ID) has been found as a neuroprotective agent.

Objectives: To evaluate the effects of Isosorbide dinitrate in a model of depressive-like behavior induced by LPS in mice.

Methods: Adult male Swiss mice (20- 30g, n = 6-8 per group) were treated with ID (5 and 10 mg / kg, ip), imipramine (10 mg / kg, ip), LPS (0.5 mg / kg, ip) or saline. Animals were divided into five groups: three were pretreated with ID 5 or 10 mg/kg or Imipramine 30 minutes before LPS administration; one received only the dose of LPS and the control group received only saline. Animals were submitted to evaluation of the depressive-like behavior through the forced swimming test, 24 h after LPS administration. After behavioral testing, animals were sacrificed by cervical dislocation and their brain areas: Pre-frontal Cortex (PF), striatum (ST) and hippocampus (HP) were separated and stored at -80°C for later measurement of nitrite levels by method according to Griess. The statistical analysis was performed by ANOVA followed by Tukey's test, considering the significant level of $p < 0.05$. The project was approved by the Ethics Committee on Animal Research of UFC. **Results:** When compared to control group, animals that received only LPS increased the immobility time (control: 68.71 ± 17.05 , LPS: 151.30 ± 9.58). Pretreatment with imipramine, an antidepressant drug, significantly reduced the immobility time (16.13 ± 3.26) when compared with the group treated with LPS. ID at 5 and 10 mg / kg doses increased the immobility time when compared with control group (ID5: 150.00 ± 33.92 ; ID10: 153.30 ± 16.71). Regarding the nitrite dosage, it was not observed significant effect on this parameter when comparing the ID groups with control and LPS groups, in all brain areas. However, a significant decrease in the nitrite levels was detected when comparing the imipramine group with control, only in the ST (control: 184.10 ± 19.89 , imipramine: 26.82 ± 1.59) and comparing the LPS group with control, in the same area (LPS: 145.80 ± 64.93). **Conclusions:** LPS induced depressive-like symptoms as verified in the forced swimming test. Isosorbide dinitrate at doses of 5 and 10 mg/kg significantly increased the immobility time.

Keywords: Depression, LPS, isosorbide dinitrate.

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