Program#/Poster#: 733.19/SS20

Title: Physical restraint, 5-HT_{1A} receptors and proliferation of rat blood lymphocytes

Location: San Diego Convention Center: Halls B-H

Presentation Start/End Time: Tuesday, Nov 06, 2007, 3:00 PM - 4:00 PM

Authors: **M. MEDINA**[1,2], F. FAZZINO[1,2], M. URBINA[1,2], *L. LIMA[1,2];
[1]Lab. Neurochem, Dept Biophysics & Biochem, Caracas 1020-A, Venezuela;
[2]IVIC, Caracas, Venezuela

Abstract: Central serotonergic system and hypothalamic-pituitary-adrenal (HPA) axis co-regulate and communicate in a bidirectional manner with the immune system. The interaction between these systems and lymphocytes might be involved in the pathophysiology of several immune disorders observed in chronic stress and in depressive patients. The aims of this study were to determine the effect of physical restraint stress on: 1) the role of 5-HT_{1A} receptors on rat lymphocytes proliferation in the presence or in the absence of the T lymphocyte mitogen concanavalin A (Con A), the agonist 8-OH-DPAT or the antagonist WAY-100635, and 2) the localization of 5-HT_{1A} receptors, corticotropin releasing hormone receptors (CRH-R) and glucocorticoids receptors (GR) in lymphocytes by the use of immunofluorescent techniques. Lymphocytes were isolated by Ficoll-Hypaque density gradients and differential adhesion to plastic. Cell proliferation was measured with a tetrazolium salt (MTT). The results obtained after 5 consecutive days of 5 daily hours of restraint were: 8-OH-DPAT did not have effect on cell proliferation, neither in basal conditions nor in the presence of Con A. WAY-100635 did not produce changes on basal proliferation, but it had an antiproliferative effect at 100 μM in the presence of Con A in the control group. In the stressed group this antagonist had an antiproliferative effect at 100 μM in basal conditions and at 50 μM in the presence of Con A. The immunofluorescent labeling of 5-HT_{1A} receptors, CRH-R and GR was not different among the groups. These results could indicate that physical restraint affects mainly functional aspects of 5-HT_{1A} receptors, but not the percentage of cells that expresses it. The interaction of 5-HT_{1A} with CRH-R or GR in lymphocytes might be important at a functional level, but not for their cellular presence after this protocol of stress.

Disclosures: **M. Medina**, IVIC, Other; **F. Fazzino**, IVIC, A. Employment (full or part-time); **M. Urbina**, IVIC, A. Employment (full or part-time); **L. Lima**, IVIC, A. Employment (full or part-time).

Support: FONACIT G-1387