EcTI Reduced the Inflammatory Response Induced by LPS in the Mesenteric Microcirculation of the Wistar Rats

Cruz, J.W.M.C.1, Brito, M.V.1, Salu, B.R.1, Lobo, Y.A.1, Sampaio, M.U.1, Maffei, F.H.A.1,2; Oliva, M.L.V.1

1 – Dep. de Bioquímica e Biologia Molecular – Infar – UNIFESP, SP, Brazil
2 – Dep. de Cirurgia e Ortopedia – FM Botucatu – UNESP, SP, Brazil

Introduction: The use of plants in folk medicine is widely used in attempts to control or cure diseases. Many protease inhibitors in plants seeds interact with different classes of enzymes, and contributed to the elucidation of biochemical pathways involved in inflammation, diabetes, tumor repression among other conditions. Objectives: In the present study, we evaluated the behavior of inflammatory cells leukocytes in the mesentery of Wistar rats challenged with LPS and treated with compound of vegetable origin, Enterolobium contortisiliquum trypsin inhibitor (EcTI). Methods: EcTI (2.5 mg/kg) was administered (im) to male Wistar rats (250-280 g) 30 min before LPS (ip) injection (20 µg/animal) anesthetized with Xilazine (100 mg/kg) and Ketamine (20 mg/kg) being, the mesentery exposed and continually perfused with Krebs-Henseleit solution (pH 7.4 / 37°C). The mesenteric microcirculation was analyzed by intravital microscopy in situ, and the number of leukocytes rolling along the venular endothelium and sticking to the vascular wall, as well as the number of migrated cells, was determined. Statistical comparisons among groups were performed using ANOVA and p less than 0.05 was considered significant. Results: The inflammatory response (to LPS) increased significantly (p < 0.01), and the number of roller, adherence and migration cells increased 290, 250 and 300%, respectively, in the inflammatory group in comparison to the control group. Treatment with EcTI resulted in decrease of those numbers down to control values. Conclusion: EcTI resulted in decreased cell behavior exacerbated in LPS-induced inflammatory response, what may indicate an involvement of this compound in the inhibition of the expression of adhesion molecules, in the inflammatory process.

Support by CNPq, CAPES, FAPESP, FAP
Keys words: EcTI, Inflammation, LPS, Microscopy Intravital