NITROLINOLEATE INHIBITS *IN VIVO* β2-INTEGRIN SYNTHESIS AND LEUKOCYTE-ENDOTHELIUM INTERACTIONS IN RAT MESENTERY

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Introduction and objectives: Nitrated lipids are emerging compounds with important implications on inflammatory conditions. In order to evaluate the effects of nitrolinoleate (LNO_2), an endogenous product of linoleic acid (LA) nitration, on leukocyte-endothelium interaction, intravital microscopy assays in the mesentery microcirculation of rats were performed. **Materials and Methods**: Male Wistar rats were divided into 7 groups of 6 rats each. Rats were subcutaneously treated 1 hour before the assays with saline (group A), ethanol (LNO_2 vehicle; group B), LNO_2 (10uM; group C), LA (10uM; group D), LNO_2 (3uM; group E), LA (3uM; group F), 10uM LNO_2 and the nitric oxide scavenger carboxy-PTIO (100uM; group G). Statistical analysis was tested by ANOVA and Tukey´s test ($p<0,05$). **Results and Conclusions**: LNO_2 diminished leukocyte rolling and mast cells degranulation compared to the vehicle ethanol. The increased leukocyte adherence induced by the vehicle was prevented by LNO_2. Since the nitric oxide-scavenger carboxy-PTIO partially inhibited the anti-adhesive effects of LNO_2, this compound may have a bipolar role on leukocyte adhesion, acting as a nitric oxide donor and by nitric oxide-independent mechanisms. LNO_2 also decreased β2-integrin expression and synthesis. LNO_2 presented anti-inflammatory effects by decreasing leukocyte rolling and adherence possibly related to its inhibitory action on β2-integrin synthesis.

Keywords: nitrolinoleate, β2-integrin, leukocytes, inflammation.
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