SESQUITERPENE LACTONES AS AN ALTERNATIVE FOR GOUTY ARTHRITIS TREATMENT
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Gout is an acute inflammatory arthritis caused by monosodium urate crystals’ deposition on joints. The increase of blood uric acid levels might be due to several factors. Gout therapy control consists on treating acute inflammatory crisis and on reducing serum uric acid levels. There is a reduced number of drugs used in clinical practice of gout and they can cause severe adverse effects, therefore, new therapeutic options are needed¹. Sesquiterpene lactones are compounds that occur in Lychnophora genus’ species (arnica brasileira). Previous studies showed that lychnopholide, eremantholide C and goyazensolide promoted decrease in serum uric acid concentrations on Swiss mice²,³,⁴. The present study evaluated the local anti-inflammatory and anti-arthritis actions of lychnopholide, eremantholide C and goyazensolide on C57BL/6 mice. Experimental model consisted in inducing arthritis by MSU on tibiofemoral joint of C57BL/6 mice and treating with sesquiterpene lactones at 2.5, 5 and 10 mg/kg doses, besides indomethacin, as positive control. Cytokines and neutrophils present in gout inflammation process were evaluated. Joint fluid was collected to analyse neutrophils’ migration by flow citometry. Periarticular tissue was removed to analyse local concentration of IL-1β and TNF-α cytokines using ELISA kit. Neutrophils’ migration was inhibited by the three sesquiterpene lactones at all doses tested. The inhibition response was similar for lychnopholide, eremantholide C, goyazensolide and indomethacin. Indomethacin effectively inhibited IL-1β synthesis, though this result was not observed for sesquiterpene lactones treated groups. Sesquiterpene lactones were able to inhibit TNF-α production. Thus, some of the mechanisms for the effect of sesquiterpene lactones in gouty arthritis were the inhibition of neutrophil migration and the inhibition of TNF-α synthesis. Lychnopholide, eremantholide C and goyazensolide are promising candidates to drugs’ development as an alternative for inflammation and gouty arthritis treatment.

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