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ABSTRACT 32

***Baccharis dracunculifolia* decreases nociception, depressive-like behaviour and supraspinal activated microglia in rats with experimental monoarthritis**

Inês M. Laranjeira, Elisabete Apolinário, Diana Amorim, Ademar A. Silva-Filho, Filipa Pinto-Ribeiro and Alberto C.P. Dias

ABSTRACT

Background: In arthritic disorders, inflammation and progressive degeneration of joints leads to the development of persistent pain and comorbid emotional impairments. Arthritis-induced peripheral sensitization leads to increased release of nociceptive molecules by primary afferents that activate neuronal cells in the spinal cord and supraspinal pain modulatory areas such as the amygdala (AMY) and the periaqueductal grey matter (PAG). *Baccharis dracunculifolia* (Bd) is a medicinal plant from Brazilian flora, popularly known as "Alecrim do Campo", used as anti-inflammatory and anti-nociceptive.

Methods: Adult 8-weeks old ovariectomized female rats (*Rattus norvegicus*, vr. *Albinus*, Wistar) weighting 210 ± 17 g were divided in four groups (n=6 per group): (i) SHAM, (ii) ARTH, (iii) ARTH treated with *B. dracunculifolia* (50mg/kg), and (iv) ARTH treated with *B. dracunculifolia* (100 mg/kg).

Results and Discussion: Mechanical hyperalgesia in ARTH animals was assessed using the pressure application measurement apparatus, anhedonia using the sucrose preference test and learned helplessness using the forced swimming test. Activated microglia was stained with IBA-1 and quantified in a subset of brain slides containing the target areas, the amygdala and the periaqueductal grey matter. A three-week oral treatment with Bd extract reversed ARTH-induced mechanical hyperalgesia and partly reversed depressive-like behaviour. Concomitantly, Bd treatment decreased the number of activated microglia in the AMY and PAG of ARTH animals.

Conclusions: *Baccharis dracunculifolia* decreases nociception, depressive-like behaviour and supraspinal activated microglia in rats with experimental monoarthritis.

Keywords: *Baccharis dracunculifolia*, monoarthritis, anti-inflammatory, anti-nociceptive, microglia

Presented by: Dias Alberto C.P.

Dep. Biology, University of Minho, Portugal

Email: acpdias@bio.uminho.pt