

OLEORESINS AND ESSENTIAL OILS IN THE TOPICAL TREATMENT OF INFLAMMATORY DISEASES: A PHYTOTHERAPEUTIC APPROACH

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It is well-known that some essential oils (EOs) and oleoresins (ORs) contain sesqui-, di-, and triterpenic structures responsible for their anti-inflammatory (AI) action. Although for some of them (*i.e.* caryophyllene, abietic acid, α - β amyrin, kahweol, boswellic acid) the AI activity is well established, their therapeutic involvement in the treatment of inflammatory disorders is rather disregarded. Aim of this work was to explore the efficacy of an ointment and a cream, containing EOs and ORs from *Copaifera langsdorffii* (Copaiba) and *Boswellia carterii* (Oliban) respectively, in the treatment of atopic psoriasis (AP) and articular arthritis (AA). The GC-MS characterization of ORs showed a set of diterpenic acids (77.49%, Copaiba), and di- and triterpenes (35.72%, Oliban) with potential AI structures. The ointment was constituted by 5% of Copaiba dissolved in shea butter and by 0.1% of tea tree oil as enhancer and preservative; the cream (W/O) was composed by 5% of Oliban dissolved in shea butter/coconut oil (35%) and 1% of Eos, tea tree, lavender, thyme, mint and rosemary, as antioxidants and preservatives.

2 volunteers (mean age 36.5yr), affected by localized and recalcitrant AP on legs and elbows respectively, were recruited for a topical application of the ointment (twice/daily, 6 week). The efficacy of the treatment was assessed by a dermatologist through a clinical visual examination of erythema, scaling, and finger palpation of the lesions. At 6 weeks, the PASI score (RIF) showed that erythema, scaling and infiltration improved markedly (from moderate to mild).

The efficacy of the cream was evaluated in 10 volunteers (mean age 80.8yr) affected by AA, and subjected to the application on the painful joints three times/daily/4 weeks. At T=00 the Visual Analogue Scale (VAS for pain evaluation was determined), Protein C Reactive (PCR) and Erythrocyte Sedimentation Rate (VES) were determined. PCR and VES indicates that there were not inflammatory comorbidities, and the VAS scores ranged from 5 to 10 cm. At the end of the treatment a significant decrease in pain sensation was observed for 3 volunteers (VAS Δ score > 4); 2 did not show any amelioration while 3 claim for a completely loss of pain (VAS=0).

For both the treatments the tolerability of the topical formulations was estimated to be very good, and no drop-out cases were observed. The present work suggest that ORs, containing di-triterpenic structures may be considered a phytotherapeutic alternative to conventional pharmacological approach in the management of inflammatory-based diseases.