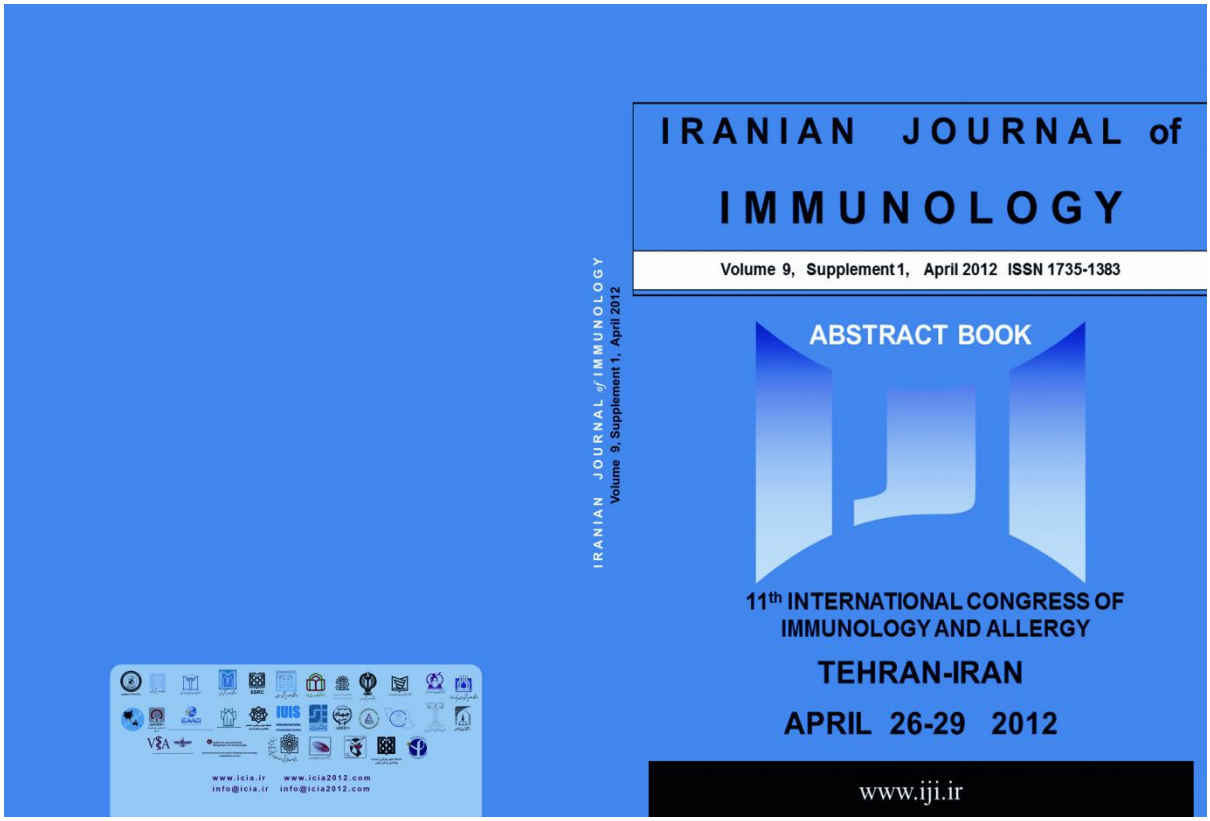

• Preparation of Turmeric Ointment Based on Traditional Iranian Medicine References and Investigation of its Efficacy on Rheumatoid Arthritis in Rat

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Background: Rheumatoid arthritis is inflammation of one or more joints which causes joint pain, swelling, stiffness and limited movement. Corticosteroids and NSAIDs are usually used for treatment but they have some limitations including lack of efficacy and high incidence of side effects. In traditional medicine, *Curcuma longa* (turmeric) is used as a powerful anti-inflammatory agent in different inflammatory disorders. In traditional Iranian medicine, combination of turmeric and egg yolk is used for inflammations due to trauma and strains. The major component of egg yolk is lecithin. In the present study, in order to evaluate the efficacy of turmeric and egg yolk combination in treatment of inflammation, the effect of turmeric ointment with or without lecithin on Rheumatoid arthritis has been studied in rat. Materials and Methods: Powder of turmeric was extracted by using methanol 80% and maceration method. Two types of ointments were prepared by using vaseline , eucerine, paraffin and bees wax. The first type contained turmeric extract alone and second one was prepared by turmeric extract and lecithin. Inflammation was induced by Freund's adjuvant subcutaneous injection in right tibiotarsal joint in rats. The ointments were applied on the joints for 20 days. Arthritis index and joint diameter were recorded before and after of 20 day's treatment and compared with control group. Serum TNF-α was measured at the last day of treatment. **Results:** The results showed the variations in the results of joint diameter and arthritis index which cannot be interpreted. While, the results of TNF-α measurement established that all products had anti-inflammatory activity with no significant differences between turmeric alone and turmeric with lecithin groups ($P>0.05$). Moreover, no differences were observed between 2.5% and 5% turmeric formulations. **Conclusion**: It is concluded that turmeric ointment has reasonable anti-inflammatory activity in rheumatoid arthritis model in rat. Since, lecithin had no effect on anti-inflammatory activity of turmeric and 2.5% and 5% turmeric groups showed the same activity, therefore, the product containing 2.5% turmeric extract is suggested as the best formulation among the tested products.

Keywords: Topical dosage form, *Curcuma longa*, Rheumatoid arthritis, Traditional medicine