

Anti-inflammatory and antioxidant activity of Joshanda partially mediated through inhibition of lipoxygenase

Haroon Khan^{1,*}, Murad Ali Khan^{2,*}, Naveed Muhammad³, Nadeem Ashraf⁴, Farah Gul⁵, Shafiq Ahmad Tariq⁶

¹Gandhara College of Pharmacy, Gandhara University, Peshawar, Pakistan.

²Department of Chemistry, Kohat University of Science & Technology, Kohat-26000, Pakistan.

³International Centre for Chemical Sciences and Biological, HEJ Research Institute of Chemistry University of Karachi, Karachi-75270, Pakistan.

⁴Department of Pharmacy, University of Peshawar, Peshawar-25120, Pakistan

⁵PCSIR Laboratories, Jamrud Road, Peshawar, Pakistan

⁶Department of Pharmacology, IBMC, Khyber Medical University, Peshawar, Pakistan.

*Corresponding Authors: harronkhan3@yahoo.com; drmalikhan@yahoo.com

Received: 18 March 2012, **Revised:** 1st April 2012, **Accepted:** 1st April 2012

Abstract

Joshanda, a polyherbal product is commonly used to treat inflammation of the mucous membranes of nose and air passages. The current study was planned to evaluate the antiinflammatory and antioxidant activity of Decoction of Joshanda (DJ). DJ was challenged in carrageenan induced paw edema and cotton pellets induced granuloma at 100, 200 and 300 mg/kg i.p. for its antiinflammatory profile. However, for its antioxidant activity, DDPH free radical scavenging test was used. DJ manifested marked attenuation of edema (56%) induced by carrageenan, at 300 mg/kg after 4th hour of administration. In cotton pellet induced granuloma, DJ exhibited profound reduction in granuloma formation which was 52.74% at 300 mg/kg i.p. respectively. When tested against lipoxygenase, DJ illustrated profound inhibition (55% at 100 µg/ml) in a concentration dependent manner. Against DDPH free radical, DJ elicited prominent scavenging activity (58%) and thus strongly harmonized the antiinflammatory activity. Our findings suggest that DJ strongly ameliorated the induced inflammation at least partially mediated through lipoxygenase inhibition and thus the results were consistent with the traditional uses of Joshanda as an antiinflammatory agent.

Keywords: Joshanda; antiinflammatory; carrageenan; cotton pellets; antioxidant

Introduction

Joshanda is a polyherbal formulation of Unani origin (Greco-Arab). It is largely used against the inflammation of the mucous membranes of nose and air passages (Azmi et al.,