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RESEARCH ARTICLE

Anti-inflammatory activity of roots of Achyranthes aspera

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Abstract
This study investigated the anti-inflammatory potential of the alcohol extract of Achyranthes aspera Linn. (Amaranthaceae) in Wistar rats after oral administration (50, 100, and 200 mg/kg). This was done using the carrageenan-induced paw edema method (acute inflammatory model) and cotton pellet granuloma test (chronic inflammatory model). The alcohol extract showed significant suppressed granuloma formation. Collectively, these data demonstrate promising anti-inflammatory activity against both acute and chronic inflammation. In addition, inhibition of prostaglandins and bradykinins may play a role. This study revealing the promising anti-inflammatory activity of Achyranthes aspera roots has been carried out scientifically for the first time.

Keywords: Alcohol extract; Achyranthes aspera (Amaranthaceae); anti-inflammatory activity; roots

Introduction

The search for new pharmacologically active agents obtained by screening natural sources such as microbial fermentations and plant extracts has led to the discovery of many clinically useful drugs that play a major role in the treatment of human diseases (Hostettmann, 1997). In India, a small proportion of wild plants have been investigated both phytochemically and pharmacologically. Achyranthes aspera Linn. (Amaranthaceae) is a wild tropical plant. The isolated achyranthine (Kapoor, 1996) is used in traditional medicine to treat many ailments and is also recommended for the treatment of menstrual disorder (Bhatterjee, 2001). The leaves of Achyranthes aspera are used in the treatment of dermatological disorders (Jayaweera, 1982). Further, a decoction of flowers and barks is given for hemoptysis and dysmenorrhea. We report here on the anti-inflammatory activity of the alcohol extract of Achyranthes aspera using the carrageenan-induced paw edema method (acute inflammatory model) and cotton pellet granuloma technique (chronic inflammatory model) in Wistar rats.

Materials and methods

Animals

Healthy adult cross-breed albino male Wistar rats (150–200 g) were used in the study. The animals were kept in plastic cages (six per cage) under standardized animal house conditions (temperature, 28–31°C; photoperiod, approximately 12 h natural light “per day”; relative humidity, 50–55%) with continuous access to pellet feed and tap water. Every effort was made to minimize animal suffering and to reduce the number of animals used in this study. The “Principles of Laboratory Animal Care”(NIH publication no: 85-23) guidelines and procedures were also used in this study (National Institutes of Health, 1985).

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