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Sedative Activity of *Argyreia populifolia* Leaf Extract

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Abstract. The sedative potential of a Sri Lankan endemic plant species, *Argyreia populifolia* Choisy (Family: Convolvulaceae) was tested using the leaf extract (2.5, 5.0 and 10.0 ml/kg) on rats by placing them in the rat hole board apparatus. The extract had no sedative effect on male and oestrous rats. In contrast, in dioestrous rats, all the 3 doses of the extract tried and in pro-oestrous rats the highest dose induced marked sedation. The sedative effect had a slow onset and short duration of action. The sedative action of the extract was blunted in ovarectomised rats (rats whose both ovaries were removed) and in dioestrous rats treated with oestradiol. The extract had no toxic effects but phytochemical screening revealed the presence of flavonoids and alkaloids. It was concluded that the sedation of *A. populifolia* leaf extract is mediated by its antihistamine activity via its alkaloids.

Key words: ***Argyreia populifolia,*** **leaves, sedation, antihistamine.**

INTRODUCTION

Argyreia populifolia Choisy (Family: Convolvulaceae) [Girithilla in Sinhala and Sindukodi in Tamil] is a common endemic species in Sri Lanka (Jayaweera, 1981). According to Sri Lankan folklore the leaves of this species are used in the treatment of a variety of diseases/disorders such as joint inflammation, animal (Arthropod) bites, haemarrhoids, heart, womb diseases, and nervous diseases(Jayaweera, 1981; Chandresena, 1994). However, the validity of most of these claims are not scientifically evaluated.

Recently, the antihistamine activity of the fresh leaf extract of this plant was discussed (Ratnasooriya and Dharmasiri, 2001). Several antihistamines, those of 'first generation' showed sedative activity (Slater, et. Al, 1999). In allopathic medicine sedatives are used as one of the pharmacotherapies for common mental disorders (Slater, et. Al, 1999; Zito, 1994). The incidence of mental disorders are increasing (Sareen and Stein, 2000) and account for more than 10 % of the global burden of diseases (Ustun, 2000) and it may further increase in the coming years (Bruntland, 2000). The sedative potential of leaf extract of *A. populifolia* is discussed in this paper.

MATERIALS AND METHODS

Collection of leaves, preparation of extract and phytochemical analysis

Fresh mature leaves of *A. populifolia* were collected from Ganemulla, Sri Lanka (between April and September, 2000). 50 g of leaves were macerated in a porcelain mortar and squeezed through a muslin cloth. The yield was 30% (v/w). The leaf extract was freshly prepared daily before use. The main qualitative phytochemical composition of the extract was determined according to Farnsworth (1966). The pH of the extract was determined using a pH meter (TOA Electronics. Tokyo, Japan).

Animals

Cross bred male and female albino rats (weighing 150-200 g) from a colony maintained at the Department of Zoology, University of Colombo were used. The rats were housed under standardised animal house conditions (temperature: 28-31 °C, photoperiod: approximately, 12 h natural light and relative humidity 55-60 %). Pelleted food (Vet House Ltd., Colombo, Sri Lanka) and water were continuously available in the cages.

Evaluation of sedative activity

Female rats at the three different stages (pro-oestrus, oestrous, dioestrous) of their oestrous cycle were selected from vaginal smearing using isotonic saline (0.9% NaCl, w/v). Dioestrous rats were randomly divided into 9 groups and orally treated in the following manner: group 1 (sample size = n =12) 2.5 ml/kg of extract, group 2 (n=12) 5.0 ml/kg of extract, groups 3 (n=12), 4 and 5 (n=6/group) were treated with 10.0 ml/kg of extract while group 6 (n=12) 0.67 mg/kg of chlorpheniramine, an antihistamine drug to produce sedative activity (Laurence and Bennett, 1992). The

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