



Original Article

Analgesic and Anti-Diarrhoeal Activities of *Trema orientalis* in Mice

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Abstract

Trema orientalis Linn. is commonly grown in many parts of Bangladesh. Its leaves have been used for analgesic and anti-diarrhoeal activity in traditional medicine. This study evaluates the potential analgesic and anti-diarrhoeal activity of methanolic and aqueous extracts of leaves in experimental acetic acid-induced writhing and castor oil-induced diarrhoea in mice. The aqueous extract of leaves showed significant ($p < 0.001$) analgesic effect in acetic acid-induced writhing in mice at a dose of 500 mg/kg body weight. In castor oil-induced anti-diarrhoeal screening both extract increased latent period ($p < 0.025$) and decrease the number of stool ($p < 0.025$) at the dose of 500 mg/kg body weight comparable with that of the standard drug loperamide. The results provide a support for the use of this plant in traditional medicine and suggest its further investigation.

Key words: Analgesic, anti-diarrhoea, *Trema orientalis* Linn.

Introduction

During the past decade, traditional systems of medicine have become increasingly important in view of their safety. Current estimates suggest that, in many developing countries, a large proportion of the population relies heavily on traditional practitioners and medicinal plants to meet primary health care needs. Although modern medicine may be available in these countries, herbal medicines (phytomedicines) have often maintained popularity for historical and cultural reasons. Concurrently, many people in developed countries have begun to turn to alternative or complementary therapies, including medicinal herbs¹.

Bangladesh possesses rich floristic wealth and diversified genetic resources of medicinal plants. It has a widely ranging tropical and the agro climatic conditions, which are conducive for introducing and domesticating new and exotic plant varieties. The use of the plants, plant extracts and pure compounds isolated from natural sources provided the foundation to modern pharmaceutical compounds.

Trema orientalis (Bengali name: Jibon or Chikon) is a tree and belongs to the Ulmaceae family. The plant is distributed in almost all districts of Bangladesh and is used in traditional medicine by the rural people and possesses various interesting

pharmacological activities. The root of the plant is used in the treatment of diarrhoea, asthma and passing of blood in urine; the bark is used as poultice in muscular pain; the roots, barks and leaves are used in epilepsy². In African folk medicine, it is used in many diseases including dysentery, hypertension, etc.³. Fruit, leaves, bark, stems, twigs and seeds are also used in traditional medicine. The leaves are used to treat coughs and sore throats and the bark is used to make cough syrups. Other reported uses include remedies for bronchitis, gonorrhoea, malaria, yellow fever, toothaches, and intestinal worms⁴.

As part of our continuing efforts to study the chemical and pharmacological aspects of the medicinal plants of Bangladesh, *T. orientalis* was investigated. Methanolic and aqueous extracts were used for investigation of their analgesic and anti-diarrhoeal activities. Since there is a vast resource of *T. orientalis* in Bangladesh, the present study will provide some valuable information about the pharmacological properties of this plant.

Materials and Methods

Plant materials: Fresh leaves of *Trema orientalis* were collected from Khulna University Campus in Bangladesh. The plant was identified by the experts of Bangladesh National Herbarium, Mirpur, Dhaka (Accession No. 31,285) and a voucher specimen was also deposited there. The fresh leaves were cleaned, dried

