Global dispensary

In vitro bactericidal activity of *Evolvulus alsinoides* L. against *Helicobacter pylori*

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Recently we experimentally showed in rats, strong gastroprotective activity of Evolvulus alsinoides (Vishnukranti), which is used in the treatment of peptic ulcers in Ayurveda. Since Helicobacter pylori are implicated with gastric ulcers, it is possible that Evolvulus alsinoides may also possesses bactericidal activity against Helicobacter pylori. This was tested in vitro using disc diffusion method and the kill curve with four clinical strains and NCTC type I (11637) of Helicobacter pylori. The results showed Evolvulus alsinoides extract has promising bactericidal activity against Helicobacter pylori.

Key words: Evolvulus alsinoides, *Helicobacter pylori*, antibacterial activity, bactericidal activity.

Introduction

Evolvulus alsinoides L. (Family Convolvulaceae) is a common weed that grows in open and grassy places in tropical and sub tropical countries including India, The Philippines and Sri Lanka. It is a perennial herb with small woody branched roots with simple and alternate leaves. Flowers are regular, bisexual, bright blue in colour, solitary or paired with short filiform peduncle (Jayaweera 1980). A paste called Vishnukranti kalka made out of dry powder root of *E. alsinoides* plant, ghee, bee honey and sugar is recommended by Ayurvedic physicians for the treatment of peptic ulcers (Vidyasagara 1920).

Recently we showed in rats that *E. alsinoides* powder induced potent gastroprotective activity when given orally (Ratnasooriya 2005). Since *Helicobacter pylori* is implicated with the formation of gastric lesions, it may be possible that *E. alsinoides* powder mediates gastroprotection by inhibiting the growth of *H. pylori.*

The aim of this study was to investigate whether *E. alsinoides* extract possesses growth inhibitory activity on *H. pylori.* This was done in vitro using *H. pylori* NCTC type I (11637) strain and four fresh clinical strains.

Materials and methods

Collection of the plant

Fresh *E. alsinoides* plants were collected from a government plot at Ussangoda in Hambantota district in August 2002. The fresh plants were immediately brought to the Department of Zoology, University of Colombo, washed in tap water and shade dried for one week. The plant was authenticated by Mrs S. Sugatadasa, Botanist, Bandaranayaka Memorial Ayurvedic Research Institute, Navinna where the voucher specimen (No: Acc 1006a) was deposited.

Preparation of *E. alsinoides* extract

The dried plants were cut into small pieces. Sixty grams of this was added to 1920 mL of tap water and boiled slowly for 5-6 h until the volume was reduced to 240 mL (Jayasingha 1976). The resulting hot water extract was then freeze dried (yield: 6.83%w/v) and stored at 4^0 C in an air tight vessel until use.

Freeze-dried powder 4.1 g was dissolved in 10 mL of sterile distilled water and introduced into bijoux bottles. These were autoclaved (Micro/Asv-2404, SAKURA FINE TECHNICAL Co Ltd, Tokyo Japan) at 110^0 C for 10 minutes.

Making the discs

Sterilised commercial discs (¼'' in diameter), (Oxoid Ltd, Basingstoke, England) were submerged in 1000 µL of the extract (N= 6/group) for 24 h before testing against the *H. pylori* strains.