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Gastro-protective activity of Sri Lankan *Piper betle* leaf extracts in rats

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Piper betle (Family : Piperaceae, S: *Bulath*) is a common medicinal plant grown in Sri Lanka. The aim of this study was to assess the gastroprotective activities of *P. betle* hot water extract (HWE) and cold ethanolic extract (CEE). Male albino rats fasted for 36 hours were divided randomly to separate groups (n = 9 / group). Each rat in group 1 orally received (1 mL of distilled water), 2, 3, 4 (200, 300 and 500 mg /kg HWE respectively), 5, 6, 7 (200, 300 and 500 mg /kg CEE respectively). After 1 h of treatment, gastric lesions were induced using absolute ethanol. After a lapse of 1 h, animals were sacrificed and their stomachs were removed and opened along the greater curvature and number of haemorrhagic lesions and their lengths were measured. The number and the length of the lesions per animal were calculated. To evaluate the mode of gastroprotective activity, the effect of *P. betle* HWE on volume and acidity of the gastric juice and mucous content of the stomach was also assessed.

Results showed that both extracts possess gastroprotective activity (in terms of number and length of lesions). Further, gastroprotective activity of both extracts of *P. betle* was dose dependent. Compared to the control, gastroprotective effect of CEE (in terms of reduction in length of gastric lesions; by 29%, 73% and 95% in 200, 300 and 500 mg/kg) was slightly higher than that of HWE (by 25%, 67% and 90% in 200, 300 and 500 mg/kg). The stomachs of 56% and 33% of the rats treated with 500 mg/kg and 300 mg/kg of HWE had neither lesions nor erythamatous patches. Further, the stomachs of 67% and 22% of the rats treated with 500 mg/kg and 300 mg/kg of CEE had neither lesions nor erythamatous patches. The hot water extract had no significant effect on pH, total acidity, free acidity and bound acidity of the gastric juice. However, HWE significantly reduced the volume (by 41%) of the gastric juice and significantly enhanced the mucous content (by 49%) adhered to gastric mucosa. It is concluded that both HWE and CEE of Sri Lankan grown *Piper betle* leaves have significant gastro protective activity in rats.

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