

Antinociceptive activity of aqueous leaf extract of *Tetracera sarmentosa* L. in rats

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ABSTRACT

In Sri Lankan traditional medicine mature leaves of *Tetracera sarmentosa* L. (Family : Dilleniaceae) is used as a healing agent in the treatment of bone fractures. A strong possibility exists that these leaves could possess antinociceptive activity but this has not been scientifically tested and validated. The aim of this study was to investigate the antinociceptive potential of an aqueous leaf extract (ALE) of *T. sarmentosa* in rats (doses used : 500, 750, and 1000 mg/kg, given orally) using three algesiometric methods (hot plate, tail flick and formalin tests). The results showed that ALE possesses marked and significant ($p < 0.05$) antinociceptive action when evaluated in hot plate (in a dose dependant manner) and formalin tests (only the highest dose tested) but not in tail flick test. The antinociceptive action of ALE had a quick onset (within 1 h) and a moderately long duration of action (up to 4 h). The antinociceptive action of ALE was not blocked by atropine (a muscarinic receptor antagonist) or metoclopramide (a dopamine receptor antagonist). Moreover, the ALE did not have sedative (in terms of hole board test) or membrane stabilizing (in terms of in vitro heat induced haemolysis of rat erythrocyte test) activities. ALE contained a wide variety of chemical constituents of which alkaloids, polyphenols, flavonoids, steroids may have contributed to antinociceptive action of ALE. Collectively, these observations suggest that ALE - induced antinociception was mediated both centrally, at supraspinal level, and peripherally. The antinociceptive action was not due to cholinergic, dopaminergic, sedative and membrane stabilizing mechanisms but possibly due to opioidergic mechanisms (by indirect evidences). The results also suggest that ALE is effective against both neurogenic and inflammatory pains. In conclusion, this study shows, for the first time, that ALE of *T. sarmentosa* possesses moderately strong pain relieving activity, which is beneficial in the treatment of bone fractures.

KEYWORDS

Tetracera sarmentosa . Antinociception . Pain inhibition . Opioid mechanism .
Nociception . Antinociception

REFERENCES