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Anti-inflammatory activities of *Alpinia calcarata*

L D A M Arawwawala[1], L S R Arambewela[*1] and W D Ratnasooriya[2]
[1] *Industrial Technology Institute, Bauddhaloka Mawatha, Colombo 7*
[2] *Department of Zoology , Faculty of Science, University of Colombo, Colombo 3*

The anti-inflammatory activity of *Alpinia calcarata* [Heen-araththa (S.)] hot water extract (HWE) and hot ethanolic extract (HEE) was determined in male albino rats using the plethysmometer. Acute hind paw edema was induced by injecting 0.05 ml carrageenin (1% suspension in sterile normal saline) locally in to the dorsal surface of the right hind paw of the rats. *A.calcarata* HWE/HEE (250, 500, 750 and 1000 mg/kg) and their respective controls; distilled water (DW) and Polyvinylpyrrolidone (1000 mg/kg in DW) were administrated orally to separate groups of rats 1 hour prior to the injection of carrageenin. The hind paw volume was measured plethysmometrically before the drug administration and after the carrageenin injection at hourly intervals up to 5 hours. As the positive control, Indomethacin (5 mg/kg in 1% Methyl cellulose) was administrated to another group of rats followed the same procedure , and hind paw volume measured at 2 and 4 hours.

The anti- inflammatory activities of *A.calcarata* HWE and HEE were dose dependent and statistically significant when compared with the respective control groups. Among the tested doses, 500 mg/kg dose of both HWE and HEE showed the best activity. Compared to the HWE, all doses of HEE had better suppression of inflammation. Inhibitory activity elicited by 500 mg/kg dose of HEE against carrageenin induced paw edema at 1,2,3,4 & 5 hours were 54.9, 68.3, 51.5, 77.6 & 71.4 % respectively. Further, this dose had better inhibition percentage in the 4^{th} hour than in the 2^{nd} hour when compared to the positive control, Indomethacin. The effects of the extracts were most pronounced at the later stages of inflammatory response, which corresponds to the phase of prostaglandin release. Both HWE and HEE elicited the maximum anti- inflammatory activity in the 4^{th} hour. *A. calcarata* extracts were well tolerated in terms of overt signs of toxicity or abnormal behavior. Therefore, the present study supports the use of *A. calcarata* in inflammatory diseases by traditional medicine practitioners and further experiments in humans are needed.

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* lsra@iti.lk Tel: 011 2683128