J Bacteriol Parasitol 2017, 8:4(Suppl)
DOI: 10.4172/2155-9597-C1-035

Acute and sub-chronic toxicity studies of three plants used in Cameroonian ethnoveterinary medicine: Mimosa pudica, Carica papaya and Aloe vera on Kabir chicks

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Ethnopharmacological relevance: *Aloe vera L.* (*Liliaceae*), *Carica papaya L.* (*Caricaceae*) and *Mimosa pudica L.* (*Mimosaceae*) are widely used in the Cameroonian ethnoveterinary medicine as a panacea, and specifically for gastrointestinal disorders as well as an anthelmintic and antibacterial.

Aim: The present study evaluated the potential toxicity of the hydro alcoholic extracts of Aloe vera leaves, Carica papaya leaves or seeds, and Mimosa pudica leaves after acute and sub-chronic administration in chicks.

Materials & Methods: For the acute toxicity test a single administration of each of the four plant extracts was given orally at doses ranging from 40 to 5120 mg/kg (n=5/group/sex). In the sub-chronic study, these extracts were given orally as a single administration to chicks at doses of 80, 160, 320 and 640 mg/kg/day for 42 days. The anti-angiogenic properties of these extracts (5-320 µg/mg) were investigated in the chick chorioallantoic membrane in vivo.

Results: In the acute toxicity test, none of the four studied plant extracts induced mortality or significant behavioral changes. The sub-acute treatment with the four plant extracts did not alter either the body weight gain or the food and water consumption. The hematological and biochemical analyses did not show significant differences in any of the parameters examined in female or male groups, with the exception of a transient rise in white blood cell counts at high doses (640 mg/kg). Additionally, these extracts did not have the potential for anti-angiogenic effects through the inhibition of neo-angiogenesis in the chick chorioallantoic membrane in vivo.

Conclusion: The results showed that the therapeutic use of the hydro alcoholic extracts of Aloe vera leaves, Carica papaya leaves or seeds and Mimosa pudica leaves had very low toxicity in oral acute high dose administration and no toxicity in oral sub-chronic low dose administration and indicated that the plants could be considered safe for oral medication in chicks.

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