In vivo Antitrypanosomal Effect of *Boswelia dalzielli* Stem bark Extract in *Trypanosoma brucei brucei* – infected mice.

Garba, M. H.[1,3]*, Kabir, A.Y.[3], Ajayi, J.[2], Ega, O.[1], Lekene, B.J.[1] and M. Inuwa.[1].

[1,3] Department of Animal Production Technology, Federal College of Wildlife Management, P.M.B. 268, New Bussa. Niger State. [2]Science Laboratory Technology Unit, Federal College of Wildlife Management, P.M.B. 268, New Bussa, Niger State. [3]Department of Biochemistry, Malaria and Trypanosomiasis Research Unit, Federal University of Technology, P.M.B. 65, Minna, Niger State.

Abstract

Few effective drugs have been developed for the treatment of trypanosomiasis. Available ones can produce unpleasant, and, in some cases, fatal side-effects. Furthermore, all the drugs now available have been widely used for many years, which has led to the development of parasite resistance to the active compounds. Because the disease is a neglected one, there is no prospect of producing new drugs against it in the nearest future, except from natural products. Against this backdrop, Ethanolic stem bark extract of Boswelia dalzielli was tested for trypanocidal effect against Trypanosoma bruce brucei infection in mice.. Sixty percent (60%) v/v crude stem bark extract of Boswelia dalzielli was used to treat infected mice at doses of 100, 200, 300 and 400mg/Kg bodyweight/day for three weeks intraperitonially. Doses of 300 and 400mg/kg bodyweight/day completely cured the experimental Trypanosoma brucei brucei infection in challenged mice within the 2nd and the 8th days of treatment respectively and the mice survived for more than two months. Administration of healthy mice with the crude extract for five days before infection did not prevent the establishment of the infection. Sub-innoculation of the blood and cerebrospinal fluid drawn from the cured mice to healthy ones failed to produce any infection within 50 days post inoculation. There was no significant difference ($p<0.05$) in the Packed Cell Volume (PCV) determined at Pre and Post treatment period in the cured mice, but a marked difference existed between the cured mice and the control. The extract was found to be toxic (LD_{50}) when administered at a dose of 1,050mg/Kg bodyweight of crude extract because 50% of the experimental animals died. The result of this study has demonstrated the anti-trypanosomal potential of ethanolic stem bark extract of Boswelia dalzielli at doses below the acute toxic dose.

Key words: Trypanosomiasis, Chemotherapy, Trypanosome, *Boswelia dalzielli*

Email: mharunagarba@gmail.com Tel. +2348134809595

Received: 2015/05/12

Accepted: 2015/06/12

DOI: http://dx.doi.org/10.4314/njtr.v10i1.S10