Ascofuranone antibiotic is a promising trypanocidal drug for nagana

Abstract

Trypanosomosis is a disease complex which affects both humans and animals in sub-Saharan Africa, transmitted by the tsetse fly and distributed within the tsetse belt of Africa. But some trypanosome species, for example, *Trypanosoma brucei evansi, T. vivax, T. theileri* and *T. b. equiperdum* are endemic outside the tsetse belt of Africa transmitted by biting flies, for example, Tabanus and Stomoxys, or venereal transmission, respectively. Trypanocidal drugs remain the principal method of animal trypanosomosis control in most African countries. However, there is a growing concern that their effectiveness may be severely curtailed by widespread drug resistance. A minimum number of six male cattle calves were recruited for the study. They were randomly grouped into two (*T. vivax* and *T. congolense* groups) of three calves each. One calf per group served as a control while two calves were treatment group. They were inoculated with 10^5 cells/mL parasites in phosphate buffered solution (PBS) in 2 mL. When parasitaemia reached $1 \times 10^{7.8}$ cells/mL trypanosomes per mL in calves, treatment was instituted with 20 mL (25 mg/kg in 100 kg calf) ascofuranone (AF) for treatment calves, while the control ones were administered a placebo (20 mL PBS) intramuscularly. This study revealed that *T. vivax* was successfully cleared by AF but the *T. congolense* group was not cleared effectively.

CONTRIBUTION

There is an urgent need to develop new drugs which this study sought to address. It is suggested that the AF compound can be developed further to be a sanative drug for *T. vivax* in non-tsetse infested areas like South Americas.