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THERAPEUTIC DRUG TRIAL IN ALBINO MICE AGAINST TRYPANOSOMIASIS

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ABSTRACT

This study was conducted to determine the trypanocidal efficacy of Antrycide, Fatrybanil and Trypamedium in albino mice experimentally infected sub-cutaneously with *Trypanosoma evansi*. For this purpose, 25 albino mice were randomly divided into five equal groups i.e. A, B, C, D and E. Groups A, B and C were infected and then treated with Antrycide, Fatrybanil and Trypamedium, respectively. Group D was kept as infected and group E non-infected control. On the basis of blood smear examination, the efficacy of Antrycide and Fatrybanil was found 100% when used in single dose as compared to Trypamedium which was 100% effective with second dose.

Key words: Trypanosomes, albino mice, Antrycide, Fatrybanil, Trypamedium.

INTRODUCTION

Haemoparasitic diseases are very common in Pakistan because of geoclimatic conditions of the country which have made this region a suitable habitat for haemoparasites. Among the haemoparasitic diseases, trypanosomiasis is a very common disease affecting horses, camels, donkeys, cattle and buffaloes. For the treatment of trypanosomiasis, different types of drugs are being used all over the world. In this study, ,three different types of trypanocidal drugs were used and their efficacy was determined in albino mice.

MATERIALS AND METHODS

For this study, 25 albino mice of same age and body weight were selected and divided randomly into five groups namely, A, B, C, D and E, with 5 mice in each group. Trypanosomal infected blood was collected from infected horses and diluted 1:5 with distilled water. This diluted blood was inoculated intra-peritoneally into mice of groups A, B, C and D at a dose rate of 0.2 ml per mice. Group E was kept as non-infected control.

After three days of infection, three anti protozoan drugs i.e., Antrycide, Fatrybanil and Trypamedium were used. Doses of these three drugs were calculated according to the weight of the mice. The groups were medicated subcutaneously as detailed below:

Group A: Antrycide (quinapyramine chloride or sulphate) @ 4.4 mg/kg.
Group B: Fatrybanil (diminazine aceturate, Fatro s.p.a) @ 3.3 mg/kg.
Group C: Trypamedium (isometamedium chloride, Merial) @ 0.4 mg/kg.
Group D: Infected control.

The drug efficacy was evaluated on the basis of absence of Trypanosoma in the blood smear made one day after treatment.

RESULTS AND DISCUSSION

The infected mice of groups A, B, C and D showed the symptoms of the disease including dullness, pyrexia and emaciation. After confirmation of infection, Antrycide, Fatrybanil and Trypamedium were inoculated subcutaneously. All the symptoms of disease disappeared in mice of groups A and B on 1st day post-treatment and blood smear examination was clear and no mortality was observed in mice of both groups. However, symptoms in mice of group C did not disappear and blood smear was not fully cleared so a 2nd dose of trypamidium was given to the mice of this group. Later, all the symptoms disappeared and blood smear examination was negative on the next day, whereas all the mice of group D were found dead, while those of group E remained alive.

The findings of this study indicated that Antrycide and Fatrybanil were 100% effective with single dose, while Trypamedium gave similar response with second dose in mice. Kumar et *al.* (1994) reported 90%

efficacy of diminazine in equines. Shen *et al.* (1991) stated that Antrycide and Fatrybanil showed higher trypanocidal effects than Trypamedium. Waheed *et al.* (2003) reported that out of 1151 infected animals, 1129 (98.09 %) responded to Trypamedium. Nasir *et al.* (1999) treated the trypanosomiasis positive animals with trypamedium @ 25 ml of 2% solution/100 kg body weight and all the animals became normal and parasitie free.

The present study indicates that Antrycide and Fatrybanil are 100% effective against trypanosomes as compared to Trypamedium for the complete elimination of Trypanosomes; albino mice when used in single dose.

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