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Efficacy of single dose albendazole and praziquantel drugs among helminth infected school children at rural area of Bahir Dar, Northwest Ethiopia

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Background: Geohelminthic and *Schistosoma mansoni* infections are the major causes of mortality and morbidity in Sub-Saharan countries. Periodic administration of anti-helminthic drugs is the most widely implemented controlling method though resistance of antihelminthic drugs makes helminth control difficult.

Objective: The aim of this study was to assess the efficacy of single dose albendazole and praziquantel drugs among helminth infected children.

Methods: A cross sectional study was conducted from May, 2017 to June, 2017. Stool examination was done by Formol-Ether Concentration Technique. Students infected with geohelminths and *Schistosoma mansoni* were treated with single dose of albendazole and praziquantel, respectively. Post treatment stool examination was done after two weeks. The data was analyzed using SPSS version 20 statistical software. The magnitude of parasite infection, percentage of egg count reduction and cure rate following treatment were calculated using descriptive statistics.

Results: A total of 409 Sebatamet Primary School students were included. The total prevalence of intestinal parasitosis was 232 (56.7%). Hookworm (41.3%) was highly prevalent followed by *Schistosoma mansoni* (12.2%) and *Entamoeba histolytica* (10.3%). The cure rate of albendazole against hookworm was 76.8%. Praziquantel had a cure rate of 91.4% against *Schistosoma mansoni* among school children. The cure rate of both albendazole and praziquantel drugs among hookworm-*Schistosoma mansoni*co-infected cases was 81.3%. Albendazole had low cure rate among hookworm infected children but praziquantel had a very good cure rate among *S. mansoni* infected children. The cure rates of both drugs are good. Therefore, period evaluation of the efficacy of antihelminthic drugs should be done.

Development of streptozotocin-induced type 1 diabetes in mice exposed to *Ascaris suum* adult and egg homogenates

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Introduction: The effect of exposure to Ascaris suum adult and egg homogenates on the development of streptozotocin (STZ) induced-diabetes in mice was conducted.

Materials & Methods: 40 individual mice (20 male:20 female) were randomly distributed into five groups: Normal Control, Diabetic Negative Control, Adult-Male Homogenate, Egg Homogenate, and Combined Adult-Egg Homogenate. All treatments were given intraperitoneally (IP) once daily for three days at a volume of 10 ml Kg-1 body weight. Diabetes was induced in all mice except those in the Normal Control group, through the IP administration of STZ at 150 mg Kg-1 body weight. Blood glucose was monitored. At the end of the 10-day observation period, urine was collected and analyzed colorimetrically for the presence of bilirubin, ketone bodies, leukocytes and glucose. Animals were sacrificed and the pancreas removed and subjected to histological assay.

Results: Results showed that all mice dosed with STZ developed diabetes on the 6th day post STZ. The urine analysis showed no significant differences among treatment groups for all parameters tested. Histological analysis of the pancreas revealed destruction of the islets of Langerhans in mice from the STZ-treated groups.

Conclusion: The study suggests that Ascaris suum adult and egg homogenates did not suppress the development of type 1 diabetes.