Diarrhoea Patients in Sub-Saharan Africa with Low School Performance and Social Status: Relationship with Chronic Intestinal Parasitosis (Short communication)

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Original Article

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Abstract:

The occurrence of *enteric parasites (geohelminths* – GH) in developing countries is high. Studies on prevalence or incidence of GH are one of the possibilities to focus the attention of the health care politics to this particular problem. The aim of this study was to assess the prevalence of GH in a rural areas of Rwanda, Burundi, and South Sudan, all countries after huge social changes, eg. civil war or genocide within last 30 years. Low school performance is a result of chronic anemia related to GH.

Introduction

The occurrence of enteric parasites (*geohelminths* – GH) in developing countries is high. Studies on prevalence or incidence of GH are one of the possibilities to focus attention of health care politics to this particular problem. The aim of this study was to assess the prevalence of GH in a rural areas of Rwanda, Burundi, and South Sudan, all countries after huge social changes, such as civil war or genocide within the last 30 years. (1) Low school performance is a result of chronic anemia related to GH.

Patients and Methods

Monthly reports on GM incidence in three rural hospitals (Outpatient Departments) in clinics in Rwanda (Bigugu), Burundi (Gasura), and Mapuordit (South Sudan) have been analyzed from March 1st 2017 till Feb 2018 in patients with signs and symptoms of intestinal infection. Stool samples taken in plastic caps were examined by microscopy after adding KOH + H_2O saline (Kato-Katz Method) and centrifuged within 30 minutes (native microscopy) with a trained medical technician.

Results and Discussion

Analysis of 884 stool samples was performed with 37% of these were positive. The commonest pathogens were *Entamoeba histolytica* (47.3%), *Ascaris lumbricoides* (17.22%), and *Giardia intestinalis* (11.83%). Slight environmental differences between three Sub-Saharan African countries have been observed, however, they were insignificant, e.g. 54% of positive samples were in females (who are predominantly preparing food), as well as in those older than 16 years of age (adults), also not significant ($p > 0,05$) probably due to deworming programs in children. *Intestinal parasitosis* due to consumption of folic acid, iron, and B12 vitamin are responsible for so-called "consumption" anemia, responsible for worse school performance in countries with poor access to clean water due to socially/economically instable environments after conflicts (genocide 1982 - 2010) or famine, with destruction of hygienic infrastructure and water supplies (1,2).

Conclusion

Intestinal parasites are a major cause of anemia in developing countries worldwide, mainly in Sub-Saharan Africa and South-east Asia. Anemia is directly responsible for low school performance of children/adolescents/mothers, where apart of *parasitosis* of the gut (GH) malaria and post-partum bleeding contributes to anemia, many times powered by malnutrition or religion-related diet with less iron, B12 vitamin, folic acid, D vitamin, cobalt, and other key elements for *hematopoiesis*. Therefore, large campaigns against soil-transmitted helminths (STH or GH) and deworming programs with twice a year *albendazole* (+*praziquantel*) are supported

by philanthrops, such as Melinda and Bill Gates, World Bank (to combat malaria, HIV, TB, and diarrhea). However, investments to environmental health and clean water supply, within 2030 Sustainable Development Goals agenda are crucial as social work and health intervention.

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