ABSTRACT# 40

Name of Trainee: Rebeca Vergara Greeno (rebeca.vergaragreeno@yale.edu)
Name and email of Mentor: Michael Cappello MD; michael.cappello@yale.edu
Type of Trainee: Medical Student

Title: Soil-Transmitted Helminth Infection and Albendazole Response in Rural School Children in Retalhuleu, Guatemala

R Vergara Greeno, Yale; S Sontha, MIT; R De Los Santos Abreu, Johns Hopkins; M D Lopez Quevedo, Universidad de San Carlos de Guatemala, E Almendarez, Yale; L Harrison, Yale; L Ralda de Morataya, Distrito de Alto Rendimiento, Retalhuleu, Guatemala, M Cappello, Yale.

Background: Soil-transmitted helminthiasis (STH) are amongst the most common diseases of poverty, despite extensive Mass Drug Administration (MDA) to school age children. Benzimidazole anthelmintics have variable efficacy against the three most common STHs (Ascaris lumbricoides, Trichuris trichiura, and hookworm), and there are now concerns about emerging resistance. Guatemala is endemic for STH, although the regional distribution of each helminth is not well defined. Our study’s aim was to determine baseline prevalence and intensity of STH infections in children in Retalhuleu, Guatemala and to evaluate the efficacy of WHO recommended single dose albendazole.

Methods: We conducted a cross-sectional study of 557 children ages 4-16 from 7 high-risk schools undergoing biannual deworming. Pre-treatment stool samples were examined via microscopy for STH eggs. Infected children were treated with a single dose of 400 mg albendazole and re-examined 10-20 days post-treatment.

Results: The prevalence of STH infection was 22.6%, with T. trichiura alone (16.7%) more prevalent than A. lumbricoides (1.4%) and T. trichiura/A. lumbricoides co-infection (4.1%). Hookworm infection was not observed. STH Prevalence by school ranged from 7.5% to 42.9% (DAR: 10.5%; Berea Vaquilito: 7.5%; Concepción Ocosito: 42.9%; Lo De Mota: 33.3%; Marina del Rey: 30.3%; San Jose Las Flores: 37.2%; 3 de Enero: 16.1%.) Most infections (99.2%) were light to moderate intensity. Post-treatment cure rates were as follows: 100% (9/9) for A. lumbricoides, 23.3% (21/90) for T. trichiura and 4.5% (1/22) for T. trichiura/A. lumbricoides co-infections. Community-wide fecal egg reduction rates were 99.9% and 50.8% for A. lumbricoides and T. trichiura, respectively.

Conclusion: This study demonstrates significant prevalence of STH infections in high-risk schools in Retalhuleu, Guatemala despite regular deworming. Our findings confirm poor effectiveness of single dose albendazole for trichuriasis. Follow up studies in rural and semi-urban schools in Guatemala are needed to monitor prevalence of STH infection, identify factors associated with albendazole response, and determine optimal dosing regimens in communities with high prevalence of T. trichiuris.

Word Count: 315