

***Strongyloides stercoralis* frequency in individuals with asthma**

Weslei Almeida Costa Araújo^a; Joelma Nascimento de Souza^a; Nilo Manoel Pereira Vieira Barreto^a; Cintia de Lima Oliveira^a; Gabriela Pimentel Pinheiro das Chagas^b; Marcia Cristina Aquino Teixeira^a; Álvaro Augusto Souza da Cruz Filho^{bc}; Neci Matos Soares^a

^aFaculdade de Farmacia, Universidade Federal da Bahia, Brasil

^bPrograma para o Controle da Asma na Bahia, Brasil

^cFaculdade de Medicina, Universidade Federal da Bahia, Brasil

Strongyloides stercoralis infection is usually chronic and asymptomatic. However, in immunocompromised individuals, such as asthmatics using corticosteroids, it can progress to a severe form with low therapeutic response and a high rate of lethality. The aim of this study is to analyze the frequency of *S. stercoralis* infection in asthmatic individuals treated at the Asthma and Allergic Rhinitis Control Program (ProAR) in Bahia/Brazil. The study included 475 asthmatic patients treated at ProAR with the diagnosis of mild/moderate or severe asthma. Strongyloidiasis diagnosis was made using three parasitological methods: spontaneous sedimentation, Baermann-Moraes and Agar Plate Culture and a serological technique by determining the levels of IgG4 anti-*S. stercoralis* by ELISA. Among the individuals evaluated, 21.1 (100/475) and 78.9% (375/475) were male and female, respectively. About 43 (204/475) and 57% (271/475) had mild/moderate or severe asthma, respectively, and 46.7% (222/475) were diagnosed with asthma more than 10 years ago. A total of 37.5% (178/475) reported having undergone one or more cycles of oral corticosteroids for 3 or more days in 1 year and 10.4% (49/475) underwent one or more cycles of injectable corticosteroids in 6 months. A frequency of enteroparasites equal to 8.4% (42/475) was found. The most prevalent pathogenic parasite was *S. stercoralis*, 1.9% (9/475), followed by *Enterobius vermicularis* and *Ascaris lumbricoides*, both with 0.2% (1/475). The frequency of IgG4 anti-*S. stercoralis* antibodies in asthmatic patients was 8% (38/475), about 4.2 times higher than the frequency found in parasitological methods. Among these individuals, 78.9% (30/38) had severe asthma and 47.4% (18/38) reported an onset more than 10 years ago. Also, 36.8% (14/38) used one or more cycles of oral corticosteroids. Among them, 92.8% (13/14) was diagnosed with severe asthma. A total of 5 individuals with a specific IgG4-ELISA positive result used one or more courses of injectable corticosteroids and all were diagnosed with severe asthma. Most of the individuals with a *S. stercoralis* IgG4-ELISA positive result were diagnosed with severe asthma. *S. stercoralis* infection could be mimicking asthma symptoms and worsening the condition. Besides, half of this individuals were using corticosteroids, which in turn can lead to the development of severe strongyloidiasis.

Keywords: *Strongyloides stercoralis*. Asthma. Corticoid.