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**Epidemiology of urogenital schistosomiasis observed in Parma (northern Italy), a non-endemic setting during a 14-year period (2002-2016)**

Adriana Calderaro<sup>1</sup>, Sabina Rossi<sup>1</sup>, Maria Loretana Dell'anna<sup>1</sup>, Giovanna Piccolo<sup>1</sup>, Federica Motta<sup>1</sup>, Monica Martinelli<sup>1</sup>, Mirko Buttrini<sup>2</sup>, Sara Montecchini<sup>\*3</sup>, Maria Cristina Arcangeletti<sup>1</sup>, Maria Cristina Medici<sup>1</sup>, Flora De Conto<sup>1</sup>, Carlo Chezzi<sup>1</sup>

<sup>1</sup>*Unit of Microbiology and Virology, Department of Clinical and Experimental Medicine, University of Parma*

<sup>2</sup>*University of Parma; Unit of Microbiology and Virology; Department of Clinical and Experimental Medicine*

<sup>3</sup>*Unit of Microbiology and Virology, Department of Medicine and Surgery, University of Parma*

**Background:** Human urogenital schistosomiasis is an acute and chronic parasitic disease caused by the trematode worms *Schistosoma haematobium*. Transmission occurs when people suffering from schistosomiasis contaminate freshwater sources with their excreta containing parasite eggs which hatch in water. People become infected when larval forms of the parasite - released by freshwater snails - penetrate the skin during contact with infested water. The classic sign of urogenital schistosomiasis is haematuria; fibrosis of the bladder and ureter, and kidney damage are sometimes diagnosed in advanced cases. Bladder cancer is another possible evolution in the later stages, such as infertility; the schistosomiasis is also considered to be a risk factor for HIV infection, especially in women. The geographical distribution of urogenital schistosomiasis is related to Africa, the Middle East and Corsica (France). In this study we report the epidemiology of urogenital schistosomiasis observed in Parma (Northern Italy), a non-endemic setting, during a 14-year period (2002-2016).

**Material/methods:** During 2002-2016, 338 urine samples belonging to subjects coming from endemic areas with suspicion of urinary schistosomiasis and/or eosinophilia arrived at the University Hospital of Parma for diagnostic purpose and were submitted to microscopic observation both directly and after centrifugation. An aliquot of each sample was submitted to the standard diagnostic method based on a filtration technique using "Thermo Scientific Nalgene Analytical Filterware" (Thermo-Scientific) followed by microscopic examination for the count of the ova on the membrane. From 2006 to 2016, all the serum samples (168) belonging to the same category of subjects were submitted for diagnostic

purpose to the specific antibody research by using "Schistosomiasis Serology Microwell ELISA" (Scimedx corporation).

**Results:** Among all the urine samples analyzed, 51, 34 in 2015-2016 period and 17 in 2002-2014 period, (15.08%) were positive for the presence of *Schistosoma haematobium* eggs. Among the serum samples tested, 61, 46 in 2015-2016 period and 15 in 2006-2014 period, (36.3%) were positive for the presence of *Schistosoma haematobium* antibodies.

**Conclusions:** Parasitic infections, once considered rare phenomena confined to tropics, are now being diagnosed with increasing frequency in industrialized countries such as Italy. This trend can be attributed to various factors such as increased travels to the developing countries, the intensive immigration flows and the important phenomenon of international child adoption. In this study, we reported the increasing number of cases of urogenital schistosomiasis in a non-endemic setting observed during a 14-year period (2002-2016) related to the increase of the rate of immigration in our city, which may reflect what is happening in our country.