Intestinal parasitosis in Italy: results of the third AMCLI-CoSP national survey

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INTRODUCTION. The epidemiology of intestinal parasites in Italy is scarcely known. The objective of the third national epidemiological AMCLI-CoSP survey was to assess the prevalence of intestinal parasitosis and to verify the quality of the diagnostic methods adopted in relation to the recommendations indicated by AMCLI-CoSP.

MATERIALS AND METHODS. A dedicated form was distributed to all participants, on which statistical surveys were carried out on the frequency of protozoa and helminths. 29 diagnostic laboratories (Fig. 1) participate in this survey. The data collection instructions concerned the performance of the standard parasitological examination and the specific detection of *Enterobius vermicularis* (Ev), *Strongyloides stercoralis* (Ss), *Dientamoeba fragilis* (Df), *Entamoeba histolytica/dispar* (Ehd) and *Cryptosporidium* spp (Cspp). The O&P was carried out on 57024 patients, the scotch test on 7985, the specific detection for Ss, Df, Cspp and Ehd on 511, 21263, 6850, 9453, respectively. Only 18 laboratories performed routinely Giemsa or Trichomic stain, 10 culture for Ss, 15 antigen test or culture for Ehd, 21 stain or antigen test for Cspp, and only 6 laboratories examined 3 or more samples from the same patient.

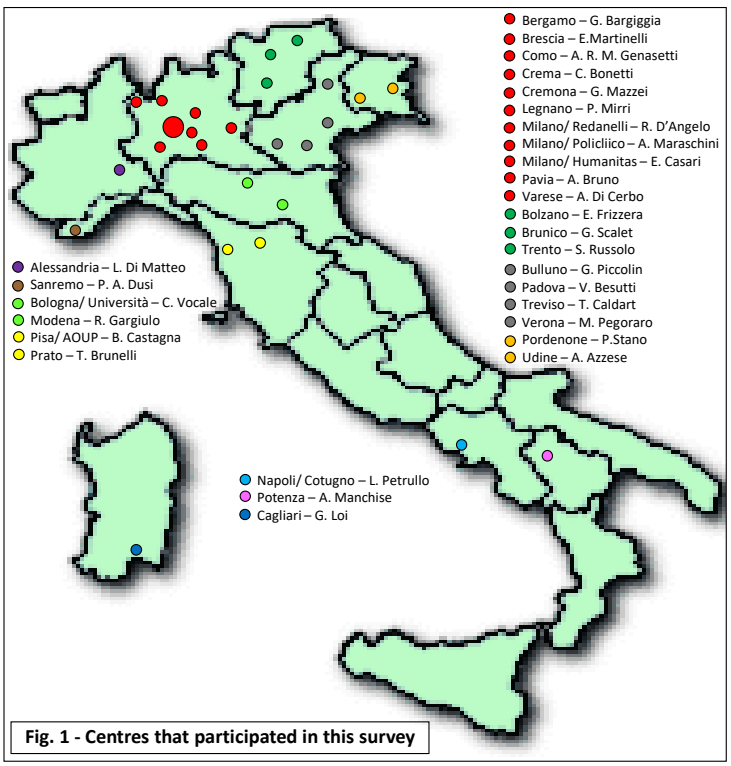

Fig. 1 - Centres that participated in this survey

RESULTS AND CONCLUSIONS. According to the O&P, 4251 (7.5%) subjects were infected with one or more parasites (Tab. 1). Pathogenic protozoa were detected in 1432 cases (2.5%), and helminths in 407 cases (0.7%)(Tab. 2). *G. duodenalis* was identified by O&P in 483 (0.8%) patients, Df in 776 (1.4%), and *C. belli* in 5 (<0.1%) (Tab. 3). The patients with O&P positive for helminths were: 188 (0.3%) for Ev; 42 (<0.1%) for Ss; 31 (<0.1%) for Hookworms; 19 (<0.1%) for *T. trichiura*, 11 (<0.1%) for *A. lumbricoides*; 68 (0.1%) for *Taenia* spp; 17 (<0.1%) for *H. nana*; 10 (<0.1%) for *D. latum*; 18 (<0.1%) for *S. mansoni*; 1 (<0.1%) for *F. hepatica* and 3 (<0.1%) for *D. dentriticum (Tab. 4)*. The specific search for Ev revealed 1239 (15.5%) positive among 7985 patients, for Ss 30 (5.9%) in 511, for Ehd 98 (1.0%) in 9453, for Cspp 21 (0.3%) in 6850, for Df 933 (4.4%) in 21263 (Tab. 5). Helminths, excluding Ev, seem to be rare in Italy, whereas protozoa are relatively more frequent. Since few laboratories apply the recommended methods and analyse the necessary number of samples per subject, it is likely that detection rates are underestimated. There is the need to improve the knowledge of the correct diagnostic procedures for intestinal parasites and/or implement the use of new technology without losing the expertise in parasitology.

N° Subjects examined	N° parasitized subjects	N° subjects with pathogens	N° subjects with only non-pathogens
57.024	4251 (7.5%)	1828 (3.2%)	2423 (4.3%)

Tab. 1 – Total results

N° subjects with pathogens	Pathogenic helminths	*Pathogenic protozoa*	Mixed Associations
1828 (3.2%)	407 (0.7%)	1432 (2.5%)	676 / 4268 (15.8%)

Tab. 2 – Positive total results

Pathogenic protozoa (1264)	Positive
G duodenalis	483 (0.8%)
D fragilis	776 (1.4%)
C belli	5 (<0.1%)

Tab. 3 – Positive pathogenic protozoa

Parasites	*Targeted searches*	Positive
E. vermicularis	7985	1239 (15.5%)
S. stercoralis	511	30 (5.9%)
E. histolytica/dispar	9453	98 (1%)
Cryptosporiium spp	6850	21 (0.3%)

Tab. 5 – Total targeted searches performed

Helminths (407)	Positive
E. vermicularis	188 (0.3%)
S. stercoralis	42 (< 0.1%)
ancilostomidi	31 (< 0.1%)
T. trichiura	19 (< 0.1%)
A. lumbricoides	11 (< 0.1%)
Taenia spp	68 (0.1%)
Hymenolepis nana	17 (< 0.1%)
Diphyllobothrium latum	10 (< 0.1%)
Schistosoma mansoni	18 (< 0.1%)
Fasciola hepatica	1 (< 0.1%)
Dicrocoelium dendriticum	3 (< 0.1%)

Tab. 4 –Positive helminths