A survey on endoparasites and ectoparasites of stray cats from Mashhad (Iran) and association with risk factors

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Abstract As there appeared to be no data available on parasite infection of stray cats in the region and considering the potential threat of stray cats for animal and public health, the present study was carried out using biological samples and necropsy finding collected from cats captured in Mashhad city in the northeast of Iran. From a total 52 stray cats examined, 18 (34.6%) were male and 34 (65.4%) were female. Ten species of endoparasites including helminthes and protozoa and two species of ectoparasites were detected in the examined cats. There were two protozoa, five cestodes, three nematodes and two arthropods. Overall 46 cats (88.46%) have been infected with at least one of the parasites. The following parasites, with their respective prevalence, were found; Nematoda: Toxocara cati 28.84%, Toxocara leonina 7.69%, Physaloptera preputialis 3.84%; Cestoda: Dipylidium caninum 23.08%, Mesocestoides lineatus 13.46%, Taenia taeniaformis 9.6%, Joyceuxiella echinorhyncoides 7.6% and Taenia hydatigena 1.92%; Protozoa: I. felis 23.7%, Haemobartonella felis 1.92%; Arthropoda: Ctenocephalides felis 1.92% and Cheyletiella blakei 1.92%. Based on our data, there was no significant difference in infection rate between male and female animals. However, the age of the cats were found to be an important risk factor associated with parasitic infection. Our results revealed that zoonotic agents, namely T. cati were present in stray cat colonies in the investigated area. In this respect, appropriate control measures should be taken and it is recommended to determine the most appropriate preventive methods.

Keywords Parasites · Prevalence · Stray cat · Risk factor · Mashhad

Introduction

Stray cat populations are important as the potential reservoir hosts of a variety of parasites in medical and veterinary point of view. The importance of controlling the size of these populations and the most appropriate methods to achieve this purpose is a controversial issue of concern for municipalities and animal protection associations.

Amongst zoonotic agents transmitted by cats, Toxoplasma gondii and Toxocara cati are among the most important feline gastrointestinal parasites (Robertson and Thompson 2002). Additionally, in Iran and southern European countries, the cat has been identified as a reservoir for Leishmania infantum (Hatam et al. 2010; Cardoso et al. 2010). Many non-zoonotic infectious agents are also important in cats. Parasites such as Isospora and Otodectes species cause diarrhea and otitis.

In Iran, cats are often reared at homes as a pet and or exploited as a predator of rats. However, many of them become stray cats as the result of changes in housing patterns. These cats live freely in urban and rural areas, and tend to discharge helminth eggs, larvae and protozoan cysts into the general environment (Jamshidi et al. 2002; Bahadori et al. 2004; Sharif et al. 2007; Zibaei et al. 2007; Arabali and Hooshyar 2009). Most surveys of feline parasites conducted in the past have been limited to feral cats (Okaeme 1986; Milstein and Goldsmid 1997; Barutzki and Schaper 2003; McGlade et al. 2003; Palmer et al. 2008;