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A comparative study of intestinal parasites from stray dogs at Basrah city from the period between 1998 till 2010

By

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SUMMARY:

In current study find the species, number and percentage infection for intestinal parasites which find in stray dog's intestine at Basrah city from the period between 1998 till 2010.

The study find a clear increases for many types of parasites. Furthermore, anew record of some parasites were fined like: *Diphyllobothrium latum, Dipylidium caninum, Uncinaria stenocephala, Metagonimus yokogawii, Heterophyes heterophyes, Echinochasmus perfoliatus*.
In conclusion, a high contamination factors were find and a clear problem record by distribution a stray dogs and it must be treated.

INTRODUCTION:

Stray dogs are widely distributed in Iraq. They represent a potential source of transmission of several diseases other than parasites like viral, fungal, rickettsial and bacterial diseases. The most common parasitic worms in dogs are intestinal parasites which include nematodes and tapeworms (Richards, 2002) in addition to the trematodes. Furthermore, the most trematodes are parasitic in the intestine or bile ducts of the dogs and human but without any heavy pathogenic attractions (Soulsby, 1968). While, canine tapeworms could be a good route to people infection by ingesting flea, or by eating vegetables with contaminated eggs from dogs' faeces. Generally, the most reported cases have been involved in children (Internet, 2003).

In the world there are many studies which are concerned with prevalence of intestinal parasites in dogs and finally infected human. Like: Oberle *et al*. (1979) reported a case of dipylidiasis in a child in Puerto-Rico.

There are many studies on stray dogs and prevalence of intestinal parasites by faecal examination. Bazzocchi and Canestri-Tortti (1980) showed from a survey on 401 faecal samples of dogs in Italy that 13% were infected with *Taenia spp*. and 3% with *Dipylidium caninum*. While, in Sudan Dada (1980) examined 145 dogs and found that 6.2% were infected with *T. hydatigena* and 90.3% with *D. caninum*. In USA 62 sheep dogs were examined by Jensen *et al*.(1982) and 51 of them were infected with the following parasites: *E.*

granulosus 9.8% ,*T. pisiformis* 29.4% ,*T. ovis* 29.4% , *T. hydatigena* 27.4% and *T. serialis* 1.9%.

Ballek *et al.* (1992) examined 397 foxes in Germany and they found that 3.8% were infected with *A. caninum*, 3.5% were infected with *Uncinaria stenocephala* and 2.3% with *Capillaria spp.*On the other hand, Skirnisson *et al.* (1993) showed that the infection rates of intestinal parasites in arctic foxes in Iceland were 72% *Mesocestodes canislagopodis*, 2% *Schistocephalus solidus*, 4% *Diphyllobothrium dendriticum*, 4% *Uncinaria stenocephala* and 6% *Capillaria aerophila.*

Ridley *et al.* (1994) pointed out by examination of grey hounds in USA that 16.1% were infected with *A. caninum* and 12.4% with *D. caninum.*

In Iraq there are few studies on the prevalence of intestinal parasites in dogs. Al-Saffar *et al.* (1962) examined 38 stray dogs in Baghdad and found that 2.63% were infected with *Ancylostoma spp.* and 13.5% with *U. stenocephala.*

Al-Khalidi *et al.* (1988) examined 35 stray dogs in Mosul city and showed that 11.4% were infected with *A. caninum* and 51.4% with *D. caninum* and *Taenia spp.*, 28.5% with *Mesocestodies lineatus*, 17.1% with *E. granulosus* and 2.8% with *T. leonina*. Moreover, the trematodes *Metagonimus yokogawii* was recorded for the first time in dog's intestine in Mosul city.

This study was conducted on a survey of intestinal parasites which found from stray dogs at Basrah city from the period between 1999 till 2010, and to determine the rate of infection with helminthes parasites among stray dogs.

MATERIALS & METHODS:

In 1998 a total of (70) stray dogs were killed by Al- Mouenas (1998), While, (51) were killed by (Al-Emara, 1999) and (117) were killed by Al-Azizz (2005), but (Al-Emarah, 2008 and Muhsein, 2010) were killed (64) and (93) respectively. All killed doges was done by shooting gun or by using strychnine sulphate tablets.

The intestine (small and large) of killed dogs was dissected lengthwise, worms were removed and the intestine contents placed in clean crystalline dishes and examined for the presence of the parasites.

Some adult worms were mounted in lactophenol. Other worms were stained with Semichon acid carmine stain according to Garcia and Ash (1979), while, others, were stained with kujarat stain according to the procedures (Al-Idressi, 2005).

The isolated worms were measured by camera Lucida and camera digital. The worms were classified according to Yamaguti (1959, 1961) and Soulsby (1968).

RESULTS:

The current study showed as seen in table (1) that a clear variation founded between the types of intestinal parasites in stray doges at Basrah city. In 1998, there are many parasites isolated but the highest was E. granulosus (70).

While, 1n 1999, the nematodes were founded more than other parasites. But, in 2005, a new species were recorded as a first time like: *Diphyllobothrium latum, Dipylidium caninum, Uncinaria stenocephala, Metagonimus yokogawii, Heterophyes heterophyes, Echinochasmus perfoliatus*.

In 2008 and 2010 a clear increasing on nematodes and cestodes respectively.

Year	Parasites	N. Worms	Prevalence
1998 (66)	*Dipylidium caninum*	15	21.4
	Echinococcus granulosus	70	100
	Taenia pisiformis	23	32.8
	Taenia hydatigena	38	54.2
	Toxascaris leonina	42	60
	Ancylostoma caninum	18	25.7
1999 (18)	*Toxascaris leonina*	6	11.7
	Toxocara canis	12	23.5
	Ancylostoma caninum	2	3.9
2005 (117)	*Diphyllobothrium latum*	6	2.69
	Dipylidium caninum	58	26.00
	Echinococcus granulosus	42	18.83
	Taenia pisiformis	10	4.48
	Taenia hydatigena	17	7.62

	Toxascaris leonina *Ancylostoma caninum* *Uncinaria stenocephala* *Metagonimus yokogawii* *Heterophyes heterophyes* *Echinochasmus perfoliatus*	23 36 6 14 6 5	10.3 16.14 2.69 6.27 2.69 2.24
2008 (64)	*Toxascaris leonina* *Toxocara canis*	150 25	100
2010 (78)	*Taenia ovis* *Taenia hydatigena*	6 80	 83.87

DISCUSSION:

The prevalence of intestinal parasites in dogs becomes a potential threat for human and animal health, and the cause of some zoonoses (Internet, 2003). Under this present study, it can be found that: a clear increasing at the both types of parasites and infection rat and these increase with years with an new types founded. This can be related with environmental factors or with increase the number of stray dogs at Basrah city, furthermore, the highly contact between many type of animals without treated the sick one. So, all these reasons make increase and distribution the parasites it to the environmental.

Sharifi and Tasbiti (1994) reported that *T. hydatigena*, *D. caninum* and *E. granuloses* were found by dissected 74 stray dogs in Kerman (Iran), while Atas *et al.* (1997) pointed

out by examining 50 stray dogs post-mortem in Turkey that *D. caninum* was found in 23 dogs, *T. pisiformis* in 6, *T. hydatigena* in 7 and *E. granulosus* in 14. Also, Umur and Arsalan (1998) studied 42 stray dogs necropsied in Kars district in Turkey and found that the prevalence of dogs infected with different cestodes species were *T. hydatigena* (4.8%), *T. pisiformis* (11.9%), *T. multiceps* (7.1%) and *E. granuloses* (40.5%).

Minnaar *et al.* (2002) showed that *D. caninum* was the most common parasite in gastrointestinal tract of 63 stray dogs (44%) in Bloemfontein area of South Africa followed by *Taenia spp.* 33%.

Al-Emara *et al.* (2003) examined 155 faecal samples from owners dogs at Basrah city and founded that 4.51% were infected with *Ancylostoma spp.*, 3.2%, *Capillaria spp.* 1.29%, *T. leonina* 10.32%, *Strongyloides sterocoralis Physaloptera canis* 5.8 %.

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