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SHORT COMMUNICATION

Helminthiasis in the pigs of Rangamati district of Bangladesh

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Özet

Sardar SA, Chakma D, Anisuzzaman, Hossain K, Islam A. Bangladeş'in Rangamati bölgesi domuzlarında helmintiazis. **Eurasian J Vet Sci, 2012, 28, 4, 233-236**

Araştırma evcil domuzlarda helmint prevalansını belirlemek amacıyla yapıldı. İnceleme 135 yerel ve melez ırk domuzda yapıldı. Dışkı örnekleri Stoll`s ova tekniği uygulanarak incelendi. İncelenen örneklerin 75 (%55.5)'inin bir veya daha fazla helmint ile enfekte olduğu belirlendi. 0-12 ay yaş ile 0-70 kg domuzlarda *Metastrongylus* sp. ve *Fasciolopsis* sp. prevalansı 12 ay ile 70 kg üzeri olanlardan önemli oranda ($p<0.05$) yüksek belirlendi. Erkek ve lokal ırk domuzlarda *Fasciolopsis* sp. prevalansı dişiler ve melez ırklardan yüksek ($p<0.05$) tespit edildi. Sonuç olarak domuzların birçok helmint türü ile enfekte olduğu ve sürekli tedavilerin gerektiği gözlendi. Uygulamalar ise domuzların sağlık durumları düzeltirken zoonoz riskini de düşürebilecektir.

Abstract

Sardar SA, Chakma D, Anisuzzaman, Hossain K, Islam A. Helminthiasis in the pigs of Rangamati district of Bangladesh. **Eurasian J Vet Sci, 2012, 28, 4, 233-236**

This study was conducted to determine the prevalence of helminths among domestic pigs. Totally 135 local pigs and cross-breed pigs were sampled. The faecal samples were examined by using Stoll`s ova counting method. Among the sampled pigs 75 (55.5%) were infected with one or more species of helminths. The prevalence of *Metastrongylus* sp. and *Fasciolopsis* sp. was significantly ($p<0.05$) higher in the pigs of 0-12 months age and 0-70 kg body weight groups compared to over 12 months and 70 kg body weight groups. The prevalence of *Fasciolopsis* sp. was significantly ($p<0.05$) higher in males and local pigs than females and cross-breed pigs, respectively. In conclusion, pigs are infected with several species of helminths. So regular dewarming is necessary which will not only develop the health status of the domestic pigs but also will reduce the risk of the zoonoses.

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Pig population, reared in the household of Bangladesh, is 326.000 (Anonym 2010). Although ethnic families of Chittagong Hill tracts, Narayangonj, Mymensingh, Dinajpur, Naogaon and Tangail districts rear pigs for household consumption (Islam et al 2006), only one Government pig farm is at Rangamati, a district located in the southeast Bangladesh. Helminths not only deprive the pigs from nutrients but also damage internal tissues making them more vulnerable to other diseases, and the end result is great economic loss (Johnson et al 1972, Soulsby 1982). Moreover, few helminths have zoonotic importance. Fasciolopsis buski. The prevalence of this parasite in Bangladesh was confirmed in previous studies (Islam et al 2006).

Very few studies were conducted in Bangladesh to address the parasitic problem of pigs (Islam et al 2005, Islam et al 2006, Islam et al 2008). For strategic control program, it is essential to know parasitic prevalence of an area. For this reason, this study was undertaken to know the parasitic prevalence of pigs.

For the study of prevalence of parasites, local pigs reared in semi-scavenging system from different places of Rangamati district and cross-breed pigs reared in intensive system in the Government Rangamati Pig Farm were sampled from September to November, 2011. A total of 135 faecal samples were examined (Cable 1957, Soulsby 1982). Faecal sample examination, parasites identification and preservation were conducted in the laboratory, Department of Parasitology, Faculty of Veterinary Science, Bangladesh Agricultural University, Mymensingh. For the convenient of the study, the pigs were divided into age (0-12 months, >12 months), sex (83 females, 52 males), management systems (85 local pigs, 50 cross-breed pigs) and body weight groups (0-70 kg, >70 kg).

Prevalence of the helminths in age, sex, management systems and body weight groups was evaluated by chi-square test. $p<0.05$ value was accepted statistically significance level.

A total of 75 (57.80%) pigs were infected with one or more species of helminths (Table 1). This finding is not supported by the findings of Islam et al (2006) who reported 100% prevalence of helminthiasis. Disparity occurred may be due to geographical location and sampling time. Among them the prevalence (20%) of *Fasciolopsis* sp. (Figure 3) was the highest followed by *Ascaris* sp. (Figure 4), *Oesophagostomum* sp. (Figure 2) and *Metastrongylus* sp. (Figure 1). The prevalence of *Brachylaemus* sp., *Necator* sp. and *Trichuris* sp. (Figure 5) was very low (below 2%). Low prevalence of these parasites was also reported by Nwoha and Ekwurike (2011). Interestingly, among the identified helminths (*Necator* sp., *Fasciolpsis* sp., *Trichuris* sp.) had zoonotic importance (Soulsby 1982, Graczyk et al 2001, Azam et al 2007, Lobo et al 2011).

Table 1. Overall prevalence of helminthes in pigs.

Name of helminth	Animals affected (%)
Fasciolopsis sp.	27 (20%)
Ascaris sp.	25 (18.5%)
Oesophagostomum sp.	21 (15.6%)
Metastrongylus sp.	16 (11.9%)
Brachylaemus sp.	2 (1.5%)
Necator sp.	2 (1.5%)
Trichuris sp.	1 (0.7%)
Overall	75 (57.8%)

The prevalence of *Metastrongylus* sp. and *Fasciolopsis* sp. was higher ($p<0.05$) among the pigs of 0-12 months age group compared to higher age group (Table 2). The pigs of 0-12 month's age group were at 3.49 and 8.36 times more risk of being infected by *Metastrongylus* sp. and *Fasciolopsis* sp., respectively. These findings are in agreement with Islam et al (2006). *Brachylaemus* sp. and *Trichuris* sp. were absent among the pigs of up to12 months age group. *Necator* sp. was absent among the pigs of more than12 months age group. Low prevalence of these helminths in pigs was also documented previously (Permin et al 1999, Nwoha and Ekwurike 2011). The prevalence of *Fasciolopsis* sp. was higher among males than females (Table 2). The risk of being infected by *Fasciolopsis* sp. was 2.9 times higher among the males pigs compared to the female. This finding contradicts with Sangeeta et al (2002), Eijck and Borgsteede (2005) and Nwoha and Ekwurike (2011). Disparity might have occurred due to geographical location and sample size of the studies. Prevalence of *Trichuris* sp. was not observed

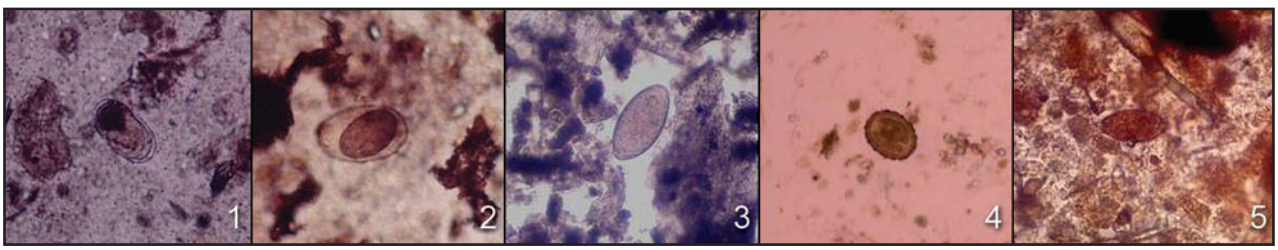

Figure 1. Ova of Metastrongylus sp.
Figure 2. Ova of Oesophagostomum sp.
Figure 3. Ova of Fasciolopsis sp.
Figure 4. Ova of Ascaris sp.
Figure 5. Ova of Trichuris sp.

among the males (Table 2). The prevalence of *Necator* sp. was significantly (p<0.01) higher among the local pigs than cross-bred pigs (Table 2). *Trichuris* sp. was prevalent only among the local pigs and absent among the cross-bred pigs. As the cross-bred pigs are raised in better management system, it is likely that prevalence among them will be lower. This finding was in agreement with Lai et al (2011). The prevalence of *Metastrongylus* sp. and *Necator* sp. was significantly (p<0.05) associated with body weight and higher among the pigs of 0-70 kg compared to over 70 kg (Table 2).

In conclusion, control strategies including regular deworming and proper sanitation should be done. Hence, this application may improve the health status of the pigs and reduce the risk of human infection by zoonotic parasites.

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Table 2. Age, sex, breed and body weight related prevalence of parasites.

Parasites	Age group (Month)		Sex		Breed		Body weight (kg)	
	0-12 (n=67)	12> (n=68)	F (n=83)	M (n=52)	Local (n=85)	Cross (n=50)	0-70 kg (n=60)	>70 kg (n=75)
Oesophagostomum sp.	8 (11.9%)	13 (19.1%)	16 (19.28%)	5 (9.62%)	12 (14.12%)	9 (18%)	8 (12.9%)	13 (17.8%)
Ascaris sp.	14 (20.9%)	11 (16.2%)	13 (15.66%)	12 (23.08%)	18 (21.18%)	7 (14%)	15 (24.2%)	10 (13.7%)
Metastrongylus sp.	12 (17.9%)[a]	4 (5.9%)[b]	8 (9.64%)	8 (15.38%)	11 (12.94%)	5 (10%)	11 (17.7%)[a]	5 (6.8%)[b]
	Odds ratio	3.49					Odds ratio	2.93
Brachylaemus sp.	0	2 (2.9%)	1 (1.21%)	1 (1.92%)	1 (1.18%)	1 (2%)	0	2 (2.7%)
Trichuris sp.	0	1 (1.5%)	1 (1.21%)	0	1 (1.18%)	0	0	1 (1.4%)
Necator sp.	2 (3%)	0	1 (1.21%)	1 (1.92%)	(1.18%)	1 (2%)	(1.6%)	(1.4%)
Fasciolopsis sp.	23 (34.3%)[a]	4 (5.9%)[b]	11 (13.25%)[b]	16 (30.77%)[a]	26 (30.59%)[a] 1	1 (2%)[b]	22 (35.5%)[a] 1	5 (6.8%)[b] 1
	Odds ratio	8.36	Odds ratio	2.91	Odds ratio	0.74	Odds ratio	7.48

[a, b]: Different letters in the same line for each group are statistically significant (chi-square test, p<0.05).

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