

Influences of age on the prevalence of Parasitic infections among donkeys in Erode district, Tamilnadu, India

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Abstract

Parasitic infections are known to affect donkeys causing considerable mortality and morbidity. Fresh faecal samples were directly collected from the rectum of donkeys belonging to four age groups viz. < 0.5 years, 0.5 – 3.0 years, 3.1 – 8.0 years and > 8 years. Donkeys of different age groups in the present study had slightly different helminth profiles. Young donkeys (<0.5 years) generally had a high prevalence of Strongyloides. They seemed to have less number of Strongyles and Ascarids. But the level of Strongyles and Ascarids increased when the donkeys became older, but then decreased. It may be due to the development of age immunity to Strongyles and Ascarids in adult donkeys. Strongyloides were found to less in older donkeys.

Keywords: Donkey, Parasitic infection, Strongyloides, Strongyles, Ascarids, Different age groups

Introduction

Donkeys are used in rural areas of India for agricultural work, transport and as pack animals. Parasitic infections are known to affect donkeys causing considerable mortality and morbidity. Relatively little is known of the helminthes parasites of donkeys in India (Chaudhri *et al.*, 1985; Sengupta and Yadav 1998; 2001). Information regarding age variation on the prevalence of parasitic infections among donkeys are lacking in literature. Hence, the present study was aimed to analyze the same in donkeys of Erode district.

Material and Methods

Fresh faecal samples were directly collected from the rectum of donkeys belonging to four age groups viz. < 0.5 years, 0.5 – 3.0 years, 3.1 – 8.0 years and > 8 years. The collected samples were properly labeled and examined microscopically by concentration and centrifugation method. Eggs per gram (EPG) of faeces were calculated for the determination of worm load. Karl Pearson's Chi-square test was used to determine the association between age and prevalence of parasitic infection.

Results and Discussion

Age variation on the prevalence of parasites among various age groups of donkeys is given in Table 1. Out of 67 faecal samples examined, 53 samples

(79.10%) were found to be positive for helminthes parasites such as Strongyles (76.12%), Ascarids (14.93%) and Strongyloides (7.46%). This observation is comparable with the finding of Chaudhri *et al.* (1985). The highest prevalence of parasitic infections was recorded in the age group of 0.5 – 3.0 years (78.50%) followed by the age group of 3.1 – 8.0 years (83.33%), above eight years (76.19%) and below 0.5 years (66.67%). This supports the findings of Wells *et al.* (1998).

The average total EPG for all the samples was 878.57. According to Soulsby (1986), 500 EPG suggests a mild infection, 800 – 1000 a moderate and 1500 – 2000 a severe infection. Applying this index, it would therefore appear that the donkeys in this study were moderately affected by helminthes. The younger donkeys had lower Strongyle infection than the older donkeys. The prepatent periods of small Strongyles are very short i.e. 14 weeks (Reinemeyer, 1986) although it is much longer in the large Strongyles such as *S. vulgaris* (180-210 days), *S. edentatus* (300-320 days) and *S. equinus* (260 days) (Soulsby, 1986). So, this variation in the prepatent periods of various Strongyles may cause their lower prevalence in younger donkeys. Strongyle egg counts seem to decrease marginally in the higher age groups of donkeys. It may be due to the development of certain resistance to Strongyles in donkeys, as they get older.

The highest prevalence of Ascarids infection was found between 0.5 and 8 years of donkeys. But,

Table-1. Age variation on the prevalence of parasitic infection among donkeys

Age group (years)	Total No. of samples	Strongyles		Ascarids		Strongyloides		Total	
		No. of samples positive	No. of samples positive	No. of samples positive	No. of samples positive	No. of samples positive	No. of samples positive	No. of samples positive	No. of samples positive
<0.5	12	8(66.67)	324.12	1(8.3)	35.40	2(16.67)	310.15	8(66.67)	669.67
0.5 – 3.0	16	14(87.05)	801.21	3(18.75)	170.56	2(12.5)	110.32	14(87.5)	1082.09
3.1 – 8.0	18	14(77.78)	715.57	5(27.78)	124.92	1(5.56)	50.17	15(83.33)	890.66
> 8	21	15(71.42)	709.31	1(4.76)	30.43	-	-	16(76.19)	739.74
Total	67	51(76.12)	637.56	10(14.93)	90.33	5(7.46)	117.66	53(79.10)	845.54

Soulsby (1986) says that it is usually horse foals of three to nine months of age that suffer from Ascarids where as Vercruysse *et al.* (1986) and Panday and Eysker (1990) recorded 23.5% and 50% of Ascarids infection on adult donkeys in Burkino Faso and Zimbabwe respectively. It would therefore appear that, it is common to find Ascarids in adult donkeys.

The prevalence of Strongyloides infection in this study was lower in adult donkeys when compared with younger donkeys. Lyons *et al.* (1990) reported that infections of Strongyloides in foals usually disappear completely between 15-25 weeks of age and Fowler (1986) stated that Strongyloides usually affect only foal under six months of age and infection tend to disappear spontaneously after this age. But the prevalence of Strongyloides in adult donkeys of the present study corroborates similar findings in adult donkeys in South Africa (Reinecke and Brooker, 1972; Wells *et al.*, 1998), India (Chaudhri *et al.*, 1985) and Zimbabwe (Pandey and Eysker, 1990). Age has no significant effect on the prevalence of infection.

Conclusion

Donkeys of different age groups in the present study had slightly different helminth profiles. Young donkeys (<0.5 years) generally had a high prevalence of Strongyloides. They seemed to have less number of Strongyles and Ascarids. But the level of Strongyles and Ascarids increased when the donkeys became older, but then decreased. It may be due to the development of age immunity to Strongyles and Ascarids in adult donkeys. Strongyloides were found to less in older donkeys.

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