

Efficacy of Moxidectin against strongylin nematodes in naturally infected horses

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Received:22.12.1997

Abstract: Twenty naturally infected horses were divided into two groups (10 control and 10 experimental) according to EPG values. An injectable formulation of moxidectin, in a dose of 0.3 mg/kg, was given to the horses orally in jam syrup. The evaluation of drug efficacy was based on EPG values. The same dose of the drug was applied to an additional 25 horses to test for side effects. The drug was found to be highly effective (100%) against strongylin parasites on days 7, 14, and 21. No side effects were observed.

Key Words: Strongylin nematodes, horse, moxidectin, treatment

Moxidectinin doğal enfekte atlarda Strongylidae ailesindeki nematodlara karşı etkisi

Özet: Bu çalışmada Moxidectinin doğal enfekte atlarda Strongylidae ailesindeki parazitler üzerine etkisi denenmiştir. EPG değerlerine göre 10 at ilaç ve 10 at kontrol olarak ayrılmıştır. İlacın enjektabl formülasyonu (Cydectin, moxidectin %1 enjektabl) atlara 0.3 mg/kg dozda reçel şurubu içinde oral yolla uygulanmıştır. İlacın etkisi EPG değerleri üzerinden hesaplanmıştır. Ayrıca ilacın yan etkisi olup olmadığını anlamak için belirtilen dozda 25 ata daha ilaç uygulanmıştır.

İlaç, Strongylidae ailesindeki nematodlara karşı 7., 14. ve 21. günlerde yüksek oranda etkili (%100) olduğu görülmüştür. İlaç uygulanan hayvanların hiçbirinde yan etki gözlenmemiştir.

Anahtar Sözcükler: Strongylidae, at, moxidectin, tedavi

Introduction

There have been several studies concerning intramuscular (1, 2) and oral (2, 3) administration of an injectable formulation, oral gel formulation (2, 4-7) and oral suspension (1) of moxidectin in the treatment of strongylin nematodes in horses.

In this study, the efficacy of an injectable formulation of moxidectin given orally in jam syrup against strongylin parasites was examined in naturally infected horses.

Materials and Methods

This study was carried out in Gemlik province of Bursa in July 1996. According to EPG values, 20 horses naturally infected with strongylin nematodes were divided into two groups, 10 animals for treatment and 10 animals in the control group. The ages and sexes of the horses are given in the table. Moxidectin (Cydectin, moxidectin, 1% injectable) was given orally to the experimental group in a dose of 0.3 mg/kg in jam syrup. Fecal samples were collected from each horse on days 0, 7, 14, 21 and examined using a modified McMaster Method (8). The efficacy was evaluated according to the following equation:

$$\text{Efficacy (\%)} = 100 \times \frac{(\text{EPG of Contr. Gr.} - \text{EPG of Treat. Gr.})}{\text{EPG of Contr. Gr.}}$$

Moxidectin was also given to 25 horses in addition to the 10 experimental animals using the same method and dosage in order to determine any side effects.

Results

The EPG values and the efficacy of the drug are shown in the table. No side effects were observed in any of the 35 animals to which the drug was applied.

Discussion

In previous studies (1-7, 9), oral suspension, oral gel and injectable formulations of moxidectin in various doses (0.2-0.5 mg/kg) have been found to be highly effective (98%-100%) against strongylin nematodes in horses. Similar results were obtained in the present study.

No side effects have been reported with moxidectin used in the form of an oral application of injectable and oral gel formulation in horses (1-4). However, in one study (2), local reactions were observed in 3 out of 20

horses when moxidectin was used with intramuscular administration. In the present study, in which an injectable formulation of moxidectin was administered

orally, no side effects and no decrease in drug activity were observed.

Table. Pre- and post- treatment EPG values and the efficacy of moxidectin

	S	A	Control Animals				S	A	Day 0	Experimental animals		
			Day 0	Day 7	Day 14	Day 21				Day 7	Day 14	Day 21
1	M	2	2950	2000	2150	500	M	2	2400	0	0	0
2	F	14	1100	450	800	850	M	4	550	0	0	0
3	F	15	2050	750	1600	2150	M	2	3300	0	0	0
4	F	18	300	700	550	600	M	2	1500	0	0	0
5	M	3	1300	1800	1600	2450	M	2	2300	0	0	0
6	F	7	1050	800	550	700	M	3	850	0	0	0
7	F	5	3200	1500	3700	2600	M	3	650	0	0	0
8	F	10	1650	1500	3000	1550	F	4	1300	0	0	0
9	F	20	1350	1400	1200	1150	F	12	4300	0	0	0
10	M	2	3350	2400	2950	1700	F	8	2400	0	0	0
Av			1830	1330	1810	1425			1955	0	0	0
GM			1518	1178	1486	1222			1602	0	0	0
%										100	100	100

S = Sex, A = Age in years, Av = Average, GM= Geometric Mean, % = Efficacy (%)

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