The Effect of Genesis Ivermectin Pour-on Against Gastrointestinal Nematodes in Cows

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ABSTRACT

Internal parasitism of feedlot cattle has been documented to reduce performance and impair immune function. GI nematodes are chronic pervasive infections that contribute worldwide to morbidity and mortality in humans and in livestock. The objective of this study was to evaluate the effect of genesis Ivermectin pour-on on decreasing of gastrointestinal nematodes. In this study, 60 male and female hybrid cows were allocated into two 30 individual groups. Then genesis Ivermectin pour-on was administered at the dose of 1mg/20kg. Results showed that genesis Ivermectin pour-on has about 90% efficacy on GI nematodes. Thus, use of genesis Ivermectin to prohibition of GI nematodes is recommended.

Key words: genesis Ivermectin, gastrointestinal tract, nematodes, cow.

Introduction

Internal parasitism of feedlot cattle has been documented to reduce performance and impair immune function [13,18,25]. GI nematodes are chronic pervasive infections that contribute worldwide to morbidity and mortality in humans [2,5,14,24] and in livestock [8,9,22]. Their co-existence with malnutrition has been recognized for decades by veterinarians and health care workers who have observed that malnutrition and intestinal parasitism share a similar geographical distribution, with the same individuals experiencing both conditions simultaneously [17]. Researchers have explained this association by providing scientific evidence both that infection leads to malnutrition through impaired digestion and absorption [19] and that malnutrition increases susceptibility to infection through impaired local and systemic host defense mechanisms [4,11,16]. Disease severity is typically related to worm burdens. Helminthiasis in small ruminant affects production losses due to mortalities; reduce weight gain and other losses of production [7]. However, the effects of helminthes infections on production of particular livestock species depend mostly upon the age of the animal, breed, parasite species involved and the intensity of the worm population. Several factors are known to determine the epidemiological pattern of the associated disease condition. These include weather condition, husbandry practice, and the physiological status of the animal [15,20,23]. Ivermectin [22,23-dihydroavermectin B_1a + 22,23-dihydroavermectin B_1b] is a broad-spectrum antiparasitic avermectin medicine. It is sold under brand names Stromectol in the United States, Ivomec in Europe by Merial Animal Health, Mectizan in Canada by Merck and Ivexterm in Mexico by Valeant Pharmaceuticals International. It is traditionally used against worms. It is mainly used in animals and humans in the...

Treatment of worm infestations (such as strongyloidiasis, ascariasis, trichuriasis, filariasis and enterobiasis). Ivermectin, under the brand name Mectizan, is currently being used to help eliminate river blindness (onchocerciasis) in the Americas and stop transmission of lymphatic filariasis and onchocerciasis around the world. Currently, large amounts of ivermectin are donated by Merck to fight river blindness in countries that are unable to afford the drug. The drug rapidly kills microfilariae, but not the adult worms. A single oral dose of ivermectin, taken annually for the 10-15 year life span of the adult worms, is all that is needed to protect the individual from onchocerciasis. Ivermectin and other avermectins (insecticides most frequently used in home-use ant baits) are macrocyclic lactones derived from the bacterium Streptomyces avermitilis. Ivermectin kills by interfering with nervous system and muscle function, in particular by enhancing inhibitory neurotransmission. The drug binds and activates glutamate-gated chloride channels (GluCls) [26]. GluCls are invertebrate-specific members of the Cys-loop family of ligand-gated ion channels present in neurons and myocytes.

Materials and methods

In this study we selected 60 male and female hybrid cows which are tested and approved that they have parasitic disease. Then these animals were divided into 2 groups by chance, controls which are not received genesis Ivermectin pour-on and treatment group which are received genesis Ivermectin pour-on. In treatment group, genesis Ivermectin pour-on based on factory recommendation was administrated at dose of 1mg/20kg. After elapsing time, on days 1,7,21 and 28 of study, samples were taken and to next measures were transported to veterinary faculty of Islamic Azad university, Tabriz branch. Then to recognizing the eggs and larva we used of Mc-master slide and Stoll method methods, respectively. Data were analyzed by Dunn's multiple comparisons test and ANOVA test and P<0.001 considered as significant differences.

Results

In this study obtained parasites from feces of cows includes:

Mean egg per gram of feces (EPG) and larva per gram of feces (LPG) and effect of Genesis Ivermectin Pour-on in control of nematodes detected on different days after treatment are showed in tables 1 and 2.

At the end of the study, based on below formula the effect of genesis Ivermectin pour-on at different days after treatment were calculated and are listed in table 3.

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<th>Table 1: Mean of EPG in treatment and control groups before and after treatment.</th>
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<th>Table 2: Mean of LPG in treatment and control groups before and after treatment.</th>
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Achieved data showed that genesis Ivermectin pour-on has potent effect in controlling of the gastrointestinal nematodes.

Discussion

Obtained data showed that genesis Ivermectin pour-on has more effect (approximately 90%) in prohibition of gastrointestinal parasites. This study is consistent with uribe et al., (1989) researches results which have been reported that Ivermectin pour-on efficacy is 99%. They also reported that this drug has preventive effect on protozoan such as Eimeria, Amoeba and Cryptosporidium [21]. Based on researcher’s reports, Ivermectin 0.4mg/kg/BW as tablet for 10 weeks decreases 100% of eggs and at the dose of 0.2 mg/kg/BW as subcutaneous and at the dose of 0.5 mg/kg/BW as pour-on route not only controlled parasitic infections but prevented of new patent natural infections. Also in other study revealed that Ivermectin at the dose of 0.5 mg/kg/BW were effective on Haemonchus contortus, Oesphagustomum columbianum, Bunostomum phlebostomum and Thalazia species [1,3,6,10,12]. With comparison of above results demonstrate that genesis Ivermectin pour-on has high effect on gastrointestinal nematodes and use of this drug to controlling and prevention of parasitic infections is recommended.

References


