

The therapeutic value of an antiparasitic product – Ecvipast-N (I. "Pasteur", Bucharest) – in equinae helminthosis

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INTRODUCTION

An essential characteristic as concerns the world's horse population dynamics constitutes its decreasing tendency (Şuteu, 1994). In Romania, the livestock decreased from 1.58 million in 1938 to 598 thousand in 1982; now, raising horses in private households has become a flourishing activity (Creţa, 1983; Şuteu, 1994). Nowadays, scientists want both to diminish the number of horses, to improve the genetic nature and to create improved breeds, either light riding and ride horses or intermediary or big horses (Şuteu, 1994).

No matter how the existing breeds are used, it is possible to get some results only through most propitious feeding, health and maintenance conditions for animals.

In this context, parasitary diseases take a major role, in determining a decrease in the strength of the infested animals and more rarely mortality. More frequent are: strongylidosis, parascarisidosis, gastrophylosis and anaplocephalidosis which constitute the parasitary tetrad typical of equinae.

In the past, the therapy of these diseases was based on narrow spectre products, like Neguvon, Ascatrix, Fenotiazin and Niclosamid. At present, we can see a development in therapy, through new, large antiparasitic spectre medicines. ECVIPAST-N joins this category, being produced by I.N.M.V. "Pasteur" R.A. Bucharest.

MATERIAL AND METHODS

The researches were done on 31 horses owned by the National Frontier Guards School "Avram Iancu" Oradea (this school having tradition in raising sport horses, with notable results, both national and european).

The experiments were made on 28 horses (aged between 1 and 16 years, males and females), compared to a control of 8 females with calf.

After anamnesis was recorded, the animals were clinically examined.

Individual coprologic samples were taken before and 14 days after therapy. The samples were examined through the following methods: McMaster, sedimentation through centrifugation, Baermann and Blagg (modified), thus establishing the parasitary extensivity (E) and intensity (I).

Blood samples were taken on EDTA and integral blood, with no coagulator, before and after therapy, from all horses. The next parameters were established through common methods: the total number of leukocytes totale (G/l), erythrocytes (T/l), haemoglobin (g/l), proteins (g/l), albumines (g/l) and gammaglobulines (g/l). The standard and average deviation were calculated and the values were compared in the groups using the "t Student" Test, within the Excel program in the IBM computer.

The laboratory analyses and the statistic processing of the data were done within the Parasitary Diseases Department, Veterinary Faculty Cluj-Napoca.

The product was given per os in a dose of 10 g/100 kg body weight, at the tongue root.

The tolerability of the product was tested on 19 working horses from the Finişel village, Cluj.

RESULTS AND DISCUSSION

The clinical exam done before therapy showed general weakness in 20% of the animals.

The coproscopic ante-therapy control in the group on which therapy was done with ECVIPAST-N (Table 1) showed an incidence of digestive parasitary diseases of 75%. Mixed infestations (25%) and single infestations (50%) were diagnosed. There were highlighted infestations with digestive strongilis (E = 71.4%, I = 100-1,100 EPG), *Parascaris equorum* (E = 17.8%, I = 200-1,300 EPG), *Strongyloides westeri* (E = 3.5%, I = 600 EPG) and infections with *Eimeria sp.* (E = 10.7%, I = 100-600 EPG).

The control group (Table 2) presented a strongilian infestation (E = 66.6%, I = 100-1,400 EPG) and with *Strongyloides westeri* (E = 33.3%, I = 100 EPG).

The administration of the ECVIPAST-N product, given per os in a dose of 10 g/100 kg body

weight, to the Oradea School horses, was well tolerated, without local or general changes or adverse reaction during the entire trial.

In the post-therapy control, the horses in the treated group still had the *Eimeria sp.* infections (E = 14.2%, I = 100-1,800 EPG), and the *Strongyloides westeri* infestation at the same level (E = 3.5%), but with lower intensivity (100 EPG). The strongilian and the *Parascaris equorum* infestations entirely disappeared.

As concerns the control group, which had not been treated, there were observed infestations with *Strongylidae* (33.3%; 200 EPG) and *Strongyloides* (33.3%; 100 EPG).

The haematological and biochemical blood parameters after therapy (Table 3), significant statistic decrease of levels, but they still remained normal for the species. Thus, leukocytes decreased from 7.5 ± 3.1 G/l to 6.4 ± 1.5 G/l, erythrocytes from 8.3 ± 1.2 T/l to 7.8 ± 1.3 T/l, total proteins from 66.3 ± 5.1 g/l to 55.1 ± 4.4 g/l and gammaglobulines from 4.5 ± 0.9 g/l to 4.3 ± 0.9 g/l.

On the contrary, the quantity of haemoglobine increased to 147.9 ± 26.7 g/l, from 133.01 ± 20.8 g/l, before therapy. This aspect is due to the nematodicide action of ECVIPAST-N on digestive strongylis which are haematofagi, thus producing anemy. Albumines also had low levels, under the physiological limits, both before (27.3 ± 3.5 g/l) and after therapy (24.5 ± 3.1 g/l).

Table 1
Results of coprological exam in horses
(before therapy)

Group	No. of samples	Incidence of parasitary diseases (%)	Diagnosis	Extensivity (%)	Intensivity (EPG)
Treated ECVIPAST-N	28	75	<i>Strongylidae</i>	71.4	100-1,100
			<i>Parascaris</i>	17.8	200-1,300
			<i>Strongyloides</i>	3.5	600
			<i>Eimeria</i>	10.7	100-600
Control untreated	8	66	<i>Strongylidae</i>	66.6	100-1,400
			<i>Strongyloides</i>	33.3	100

Table 2
Results of coprological exam in horses (after therapy)

Group	No. of samples	Diagnosis	Extensivity (%)	Intensivity (EPG)
Treated ECVIPAST-N	28	<i>Eimeria</i>	14.2	100-1,800
		<i>Strongyloides</i>	3.5	100
Control untreated	8	<i>Strongylidae</i>	33.3	200
		<i>Strongyloides</i>	33.3	100

Table 3
Haematological and biochemical blood profile in horses treated with ECVIPAST-N

BEFORE THERAPY						
Statistics	Leukocytes (G/l)	Erythrocytes (T/l)	Haemoglobine (g/l)	Total proteins (g/l)	Albumines (g/l)	Gammaglobulines g/l
Average	7.59655	8.35517	133.014	66.3355	27.3774	4.50323
St. dev.	3.15249	1.27772	20.859	5.19157	3.54276	0.95725
AFTER THERAPY						
Average	6.46667	7.88667	147.903	55.1903	24.5419	4.36129
St. dev.	1.58752	1.38607	26.7237	4.48459	3.12013	0.98748
t Test	0.00527 **	0.04813 *	0.02844 *	7.5E-13 ***	2.2E-05 ***	0.37998 N

N = insignificant statistic; * = significant statistic; ** = distinct significant statistic; *** = very significant statistic.

CONCLUSIONS

The researches concerning the assessment of the therapeutic efficacy of ECVIPAST-N (INMV "Pasteur" R.A. Bucharest) were done on a group of 28 horses, compared to a control one of 3 animals (aged between 1 and 16 years), from the National Frontier Guards School, Oradea. They led to the followings:

* The product efficacy was maximal in strongyloidosis and parascarisosis, leading, after 14 days of treatment, to the disappearance of both the *Strongylus* eggs shed (from 71.4%, 100-1,100 EPG) and the *Parascaris* eggs shed (from 17.8%, 200-1,300 EPG).

* In strongyloidosis, Ecvipast-N reduced the infestation intensivity from 600 EPG to 100 EPG after therapy, without modifying the extensivity (3.5%).

* The control group, initially infested with *Strongylidae* (66.6%, with 100-1,400 EPG) and *Strongyloides westeri* (33.3%, with 100 EPG), was parasitologic negative to the final test, because of the discontinuous shed of parasites.

* To the cured group, the haematological profile was characterised by the decrease of the leukocytes (from 7.5 ± 3.1 to 6.4 ± 1.5 G/l) and erythrocytes number (from 8.3 ± 1.2 to 7.8 ± 1.3 T/l), and the increase of the haemoglobine quantity (from 133.01 ± 20.8 to 147.9 ± 26.7 g/l).

* Among the proteinogramme compounds, statistic significant decrease had the total proteins (from 66.3 ± 5.1 to 55.1 ± 4.4 g/l) and the albumines (from 27.3 ± 3.5 to 24.5 ± 3.1 g/l). The gammaglobulines had an insignificant statistic variation.

* During the entire trial, the Ecvipast-N, given p.o., in a dose of 10 g/100 kg body weight, was well tolerated, without local or general changes, or adverse reactions.

REZUMAT

Un produs antiparazitar: Ecvipast-N (I. Pasteur, București) – verificarea eficacității terapeuțice în helmintoze la ecvine

Evaluarea eficacității terapeuțice a produsului ECVIPAST-N (I. "Pasteur" R.A. București) s-a realizat pe 28 cabaline, comparativ cu un lot martor din 3 cabaline în vârstă de 1-16 ani, provenite din U.M. Grăniceri Oradea.

Eficacitatea produsului a fost maximă în strongilidoză și parascaridoză, determinând dispariția coproeliminărilor ouălor de strongili, de la 71,4% (100-1.100 OPG), respectiv a celor de *Parascaris*, de la 17,8% (200-1.300 OPG), după 14 zile.

În strongilidoză, s-a redus intensitatea parazitismului de la 600 la 100 OPG, post-terapeutic, fără a se modifica extensivitatea infestației (3,5%).

Tabloul hematologic, la cabalinele tratate, se caracterizează prin scăderea numărului de leucocite ($7,5 \pm 3,1$ la $6,4 \pm 1,5$ G/l) și al eritrocitelor ($8,3 \pm 1,2$ la $7,8 \pm 1,3$ T/l) și creșterea cantității de hemoglobină ($133,01 \pm 20,8$ la $147,9 \pm 26,7$ g/l).

Dintre constituenții proteinogramei, înregistrează scăderi semnificative statistic proteinele totale ($66,3 \pm 5,1$ la $55,1 \pm 4,4$ g/l) și albuminele ($27,3 \pm 3,5$ la $24,5 \pm 3,1$ g/l).

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