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CATTLE PYROPLASMOSIS THERAPY AND PREVENTION

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ABSTRACT:

The article states that uzbicarb effectiveness in the pyroplasia treatment in cattle is higher than 3 mg/kg cattle's live weight, and the polycarb prophylactic effect in 5.0 ml per 100 kg of live weight is 15 days.

KEYWORDS: pyroplasmosis, prophylaxis, diamidine, uzbicarb, berenil, cattle.

RELEVANCE:

Among the invasive diseases, cattle pyroplasmosis is the most insidious diseases, the causative agents which are transmitted to animals by pasture blood-sucking ticks certain types. Domestic scientists much attention was focused on ixodid ticks fauna in the republic, identifying tick carriers of animal pyroplasmosis pathogens and studying fauna and biology. A large work amount has been carried out to develop methods for combating ixodid ticks, which have been introduced into production. At the same time, the pyroplasmosis causative agents study in cattle and the search for combating means and preventing this disease was carried out. Along with this, control measures, diagnostic tools, therapy, specific and chemical prophylaxis were developed and improved, and control over the epizootic pyroplasmosis state was carried out.

Therefore, it became necessary to synthesize domestic antiprotozoal drugs for the treatment and pyroplasmosis prevention in cattle. The antiprotozoal drug uzbicarb was synthesized by researchers of the Chemistry faculty of National University. This drug is considered an diamidine analogue, which was previously produced in the Russian Federation, and then synthesized in our Republic.

Along with this, preparations were developed for polyamidine, and then polycarb, which have prophylactic properties for pyroplasmosis in cattle. Polymer complex polycarb is a 4% uzbicarb solution on apple pectin, which leads to parasite deformation, disrupts metabolism, and stops DNA synthesis. As a result, the parasite life cycle is disrupted.

RESEARCH GOAL:

The therapeutic and prophylactic properties study of uzbicarb and polycarb in cattle pyroplasmosis.

OBJECTIVES:

1. The medicinal properties study of uzbicarb in pyroplasmosis case in cattle.
2. The preventive properties study of polycarb in cattle piroplasmosis.

MATERIALS AND RESEARCH METHODS:

Scientific research work to study the medicinal uzbicarb properties in pyroplasmosis was carried out as in experimental conditions. Under experimental conditions, animals were infected with blood from spontaneously diseased animals.

Before the beginning and during the experiments, the experimental animals were subjected to clinical and parasitological examination. During the clinical examination, the body temperature, pulse rate and respiration rate were measured; the visible mucous membranes state, the bloody urine presence, and the superficial lymph nodes state were observed. To identify blood parasites, smears and peripheral blood were prepared and the damage degree to erythrocytes by paroasites was determined. The smears were fixed with ethyl alcohol and stained according to Romanovsky Azur-Eosin method.

RESEARCH RESULTS:

The therapeutic effectiveness study of uzbicarb in pyroplasmosis under experimental conditions was carried out on 6 experimental animals. The animals were infected with the invaded pyroplasmosis blood**.**

Clinical and parasitological studies were introduced daily, as a result of 9 days after infection, the experimental animals showed pyroplasmosis and parasitemia clinical signs in the blood. Then the experimental animals were divided into 2 groups, each of 3 animals.

1st animals group was treated with uzbicarb at 2 mg/kg dose of animal weight;

2nd animals group was treated with uzbicarb at 3 mg/kg dose of animal weight.

As a clinical and parasitological studies result, it was found that uzbicarb at a 2 mg/kg dose of animal weight turned out to be ineffective, and at this time, the use at a 3 mg/kg dose was effective.

Experiments to study the polycarb preventive properties in experimental pyroplasmosis were carried out on 3 animal.

Experimental animals were injected subcutaneously with 5 ml polycarb per 100 kg of animals live weight. Then, 15 days later, they were infected with pyroplasmosis. Clinical and parasitological studies were carried out daily for 30 days.

As the studies result, it was established that polycarb, when modified on the uzbicarb basis with apple pectin, has a prophylactic efficacy for pyroplasmosis for 15 days (table 1).

Table № 1 The polycarb preventive properties' study in pyroplasmosis

Animals Number	Prevention method	Infection Method	Results
3	Polycarb was injected subcutaneously at a 5.0 ml dose per 100 kg w/m animals.	Infected with pyroplasmosis	During 15 days after infection, clinical and parasitic reactions of pyroplasmosis did not appear.

Thus, polycarb prophylactic efficacy in piroplasmosis is up to 15 days. Therefore, the polycarb use for prophylactic purposes with piroplasmosis is advisable.

CONCLUSIONS:

- The uzbicarb use at 3 mg/kg dose has therapeutic efficacy for pyroplasmosis in cattle;

- The polycarb use at 5.0 ml dose per 100 kg animals live weight prevents piroplasmosis for up to 15 days.

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