Research on the Use of Enzyme Proteolytic Based Products in Salpingites, Peri and Parametritis Treatment in Cows


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Abstract. This paper aims to assess the opportunity of including in therapy protocols for localized puerperal affections with acute and subacute evolution in bovine species, of products containing proteolytic enzymes (alpha-chymotrypsin, trypsin and papain) in order to lyse the deposits of fibrin resulted from the performance of localized inflammatory processes.

Research has been conducted on 180 cattle from three exploitations of intensive farming in the county Cluj-Napoca, diagnosed with localized puerperal disease (salpingitis, peri-and parametritis) with acute and subacute evolution. Protocol of administration of preparations containing proteolytic enzymes involves making three parenteral (IM) administrations, at 48 hours interval. Using proteolytic enzymes in the classical protocols of such therapy resulted in cure of disease, confirmed after transrectal ultrasound exam, followed by a gestation rate of 65% of cattle in the lot of research compared with a recovery of only 20% to the witness group.

INTRODUCTION

Frequency of puerperal diseases occurrence is influenced on one hand by the quality and promptness of obstetrical intervention, and on the other hand by the hygiene conditions and the evolution of some diseases such as alimentary latent metabolic acidosis. The untreated or improperly treated localized puerperal diseases are an important issue in reforming the cattle from the farms that are using a system of intensive exploitation.

MATERIALS AND METHODS

Research has been conducted during April 2006 - August 2008 on a number of 180 cows of the breeds German BĂLŢAT, Holstein and Red Holstein aged between 3 and 9 years, from three intensive farms of the county Cluj-Napoca, noted conventionally with the letters A, B and C.

The farm A has a herd of 186 Holstein breed cattle, procured through imports, of which 144 are primipara and 42 are calves aged between 0 and 6 months. Cows are fed with fodder consisting of hay (4 kg), corn silage (27 kg), beer draft (20 kg) and concentrates (10 kg). Analyzing the structure of feed used, there is an imbalance between the components and fiber-rich intake of carbohydrates.

Farm B has a herd of 227 cattle of which 121 dairy cows and 126 animals belonging to the age categories 0-6 months and 6-12 months. The food ration structure used by this farm reveals an increased intake of concentrate feed and beer draft at the expense of the fiber.
Farm C owns 467 cattle, of which 320 dairy cows and 137 animals in the age categories 0-6 and 6-12 months. In this case, also the alimentary ration reveals an increased intake of concentrate feed and beer draft at the expense of the fiber.

Composition of experimental batches was preceded by general clinical examination, and transrectal examination was completed by ultrasound exam of the animals taken in the study. Thus, 38 were diagnosed of suffering from bovine peri-and parametritis and 142 cows with salpingitis uni-or bilateral, with acute and subacute evolution.

The lot I was composed of 19 cows diagnosed with peri-and parametritis and 71 cows with adherent salpingitis. They have undergone treatment with intrauterine lavage using Endozol ®, between three and five administration / animal at 48 hours.

Lot II was composed of 19 cows diagnosed with peri-and parametritis and 71 cows with adherent salpingitis. The protocol therapy for the subjects of this batch includes the administration via intrauterine route of Endozol ® respecting the protocol as stated in the previous batch and the parenteral inoculation of the Necrovexym ® (papain, trypsin and α chemotrypsin) 20 ml / animal, three administration at 48 hours interval.

Monitoring the evolution of exudative inflammatory diseases diagnosed in cattle from two experimental groups was performed by clinical transrectal examinations completed by transrectal ultrasound examination. Certainty of healing diseases covered by this study is given by the gestation installation as a result of artificial insemination occurred after remission of clinical signs characteristics for these disorders.

RESULTS AND DISCUSSIONS

Following the analysis of results obtained in the study we observe a higher net recovery after gestation installing in batch II, the protocol of therapy, which involves the use of pharmaceutical preparations containing Proteolytic enzymes (Necrovexym ®). In addition, the lysis and resorption of fibrin deposits resulting from the evolution of exudative inflammatory processes of at different segments of the genital apparatus is faster and more complete in the case of cattle this lot.

<table>
<thead>
<tr>
<th>Animal batch</th>
<th>Adherent salpingitis</th>
<th>Peri- and parametritis</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Diagnosticated cases</td>
<td>Cured cases</td>
<td>Diagnosticated cases</td>
</tr>
<tr>
<td>Lot I</td>
<td>71</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td>Lot II</td>
<td>71</td>
<td>47</td>
<td>19</td>
</tr>
</tbody>
</table>

The mobility restore of affected genital segments, the palpatory characters and cyclic ovarian activity occurred over a period of 90 to 160 days for subjects belonging to batch I. By comparison, the healing period was between 35 and 80 days in cattle in the lot II.

Peri-and parametritis along with adherent salpingitis are considered common complications of the pathological evolution of the bovine puerperium, constituting the main cause of reform in this species. Protocols used in therapy of localized puerperal disease including medicinal preparations containing proteolytic enzymes are beneficial, resulting in a rapid lysis and in most cases complete, of fibrin deposits that result from the evolution of
exudative inflammatory processes in the genital system, this actually increasing the percentage of animals healed and back in production for a medium and long term.

The cost of treatment increased by approximately 70 RON / animal, this investment being retrieved through the recovery of an increased percentage (65%) of animals suffering from these diseases of the genitalia.

CONCLUSIONS

• Use of medicinal preparations containing proteolytic enzymes in the therapy protocol of localized puerperal disease, determines on the one hand an increase in the percentage of animals healed (65% versus 20% in case group) and on the other hand the reducing of the treatment period (between 35 and 80 days for lot of experience compared with a range of 90 to 160 days for the group) and consequently of the "service period" and "calving interval".

• Cost price is 70 RON / animal, this investment being easily recovered by the returning of animals into production and is fully justified considering the purchase price of heifers for replacement of reformed cows.

• Therefore, we recommend the routine use of the preparations containing proteolytic enzymes in the therapy protocols of puerperal localized disease in order to increase the percentage of healed animals and to reduce the duration of application of treatment.

REFERENCES