

NEW POSSIBILITIES FOR TREATMENT OF PUERPERAL DISORDERS IN HIGH PRODUCING DAIRY COWS

T. PETRUJKIĆ¹, B. PETRUJKIĆ², I. JEREMIĆ³, B. IVKOVIĆ⁴, M. POLOVINA⁵

Summary

Delivery in cows especially difficult calving leads to disorders of normal uterine involution, lengthening of service period, increased insemination index and in certain number of cases (from 6 to 12 %) can lead to temporary or permanent infertility. Often findings in these cows are repeated heats without clear clinical symptoms of cause.

Pathologic puerperium in first 9 and especially in following 12 days or in first 3 weeks after calving (because of retained placentas or puerperal infection) leads to extended service period and increased insemination index.

This can be prevented by use of novel approach to therapy with widely used cures for local treatment of uterus and often better with use of hypertonic solutions of NaCl in 3 continuous days in hot – cold pattern in first 3 weeks after calving.

In our work 1177 cows was included, we achieved shorter service period, lower insemination index and improved fertility of cows.

Key words: difficult calving, endometritis, local uterus treatment, service period, insemination index

On a dairy farm with 1177 cows, endometritis, long service period and increased insemination index were obstacles for good fertility and reproduction an for high quality milk production as well.

Cows were monitored over several evidences and basic head charts, from such evidence main cause of decreased fertility could not be seen. Because of that we changed basic approach to the problem and started to monitor all cattle over lists (from A to I list) and did also pay special attention to control of nutrition, production and reproduction. Main lists used for reproduction were following: List A – cows in dry period, List B – cows for A. I., List C – calved cows 45 to 85 days post partum, List D – problematic cows with a long service period and List I – cows for estrus induction.

By control of cows over lists, once a week we conducted rectal palpations and therapies. Solutions used for flushing were widely used antiseptically solutions, were applied in a hot – cold pattern in three continuous days, this was supported by additional application of vitamins and minerals. With such approach in about 90 days, shorter service period was achieved, it was reduced from 180 to 150 days,

¹ Tihomir Petrujkić, professor, Faculty of veterinary medicine, Belgrade

² Branko Petrujkić, DVM, postgraduate - master studies, Scholarship of Ministry of science and environment of Serbia, Belgrade

³ Ivan Jeremić, DVM, postgraduate student -specialization, PKB Corporation Belgrade

⁴ Branislav Ivković, DVM, postgraduate student -specialization, PKB Corporation Belgrade

⁵ Mladen Polovina, Mr.sci., vet. spec., PKB Corporation Belgrade

number of deaths was also decreased as well as insemination index which was 2,84 at the beginning to 2,34 doses per pregnant cow. Number of evident clinical cases of ketosis was decreased, together with decrease of occurrence of ovarian cysts and other metabolic disorders. This all lead to increase of overall herd fertility for 15 %.

Materials and methods

Problematic cows in a herd (138 cows) were examined by use of clinical methods. Blood samples from 48 cows were taken from coccygeal vein (6 samples from each group from 8 groups of cows) and examined biochemically in order to find if metabolic disorders are present. Cows were monitored for occurrence of clinical cases of ketosis, each day, by use of Rothera test in urine samples. Gravidity was diagnosed by use of ultrasound (linear probe 7,5 MHz, MIND RAY DP 6600) by 35. day and by rectal palpations around 44 and 60 days after A. I.

After confirmation of diagnosis of disorders (endometritis, ovarian cysts and hypo function) or confirmation of pregnancy cows were sorted in appropriate list (List A to List I) and adequate treatment for each case of reproduction disorder was conducted. Treatment involved local and/or parenteral therapy in three continuous days. Solutions used for uterus flushing were widely used antiseptically solutions, Lughole's solution (2%) povidone iodide (1%), Iotagen (0,2 to 2 %). Volume of solution which was applied i. u. varied from 60 to 200 ml according to each case. It was applied in a hot – cold pattern in three continuous days, this was supported by additional application of vitamins and minerals.

Cows were monitored in dry period, in delivery stall, in avans group and in milking group as well. Appearance of first oestrus and length of cycle was regularly controlled and evidenced. Body condition score and nutrition were monitored closely and with special caution.

Results and discussions

Of 811 cows examined, 138 cows were found to have long service period and conception problems.

By analysis of metabolic profile of cows and heifers, high concentrations of phosphorous were found in a group of heifers in high pregnancy and in a group of cows in early lactation, average value was 2,78 mmol/L (reference value 1,4-2,5 mmol/L). Calcium level was normal.

In heifers ration between Ca : P was very tight, that was accompanied by clinical findings of smooth ovaries, and this was treated with correction of meal.

In a group of cows on a List C in less than 90 days number of pregnant cows was increased for 56 cows together with increase of milk production of 1000 liters a day.

Total number of milking cows was reduced from 430 to 309 cows. Daily production of milk varied between 7500 and 800 liters a day. Number of problematic cows was reduced from 138 to 36 and from that number only 3 cows (8,33%) were excluded from further reproduction and sent to slaughter house. All other cows stayed in reproduction cycle and adequate treatment or A. I. was undertaken. Insemination index was decreased from 2,84 at the beginning to 2,34 doses per pregnant cow. Body condition score varied from 3,5 to 3,75.

Conclusions

Our work once a week in delivery stall, avans group and milking group of cows with monitoring of cows over lists gave following results of herd management:

1. Average service period was decreased for around 30 days (fro 180 to 150 days)
2. Number of pregnant cows was increased from 190 to 246 cows in a short period.
3. Milk yield was increased for 1000 liters a day.
4. Insemination index was reduced from 2,84 to 2,34 doses for pregnant cow.
5. Number of clinical cases of ketosis, puerperal endometritis, deaths and mastitis was reduced and body condition score was improved to 3,5 - 3,75.
6. Advancing of cows in a period from 15 to 90 days after calving improves fertility and gives ability to continuously monitor reproduction.
7. For optimal results in reproduction and milk production everyday control of body condition score in necessary together with adding 2 kilos of high quality hay before first meal which is concentrated feed or TMR.
8. Hygienic quality of water and feed used in dairy production should not be overseen, and meal should be adjusted for phase of lactation/production for optimal results in reproduction.

References

1. **Marković B., Grus I.:** Prilog terapiji puerperalnih oboljenja i hroničnih endometrita goveda (lotagen-om). Veterinarski glasnik, 15, 7: 595- 599, 1961.
2. **Petrujkić T, Mrvoš G., Jakšić Z, Vuković D.:** Novi pristup lečenju patološkog puerperijuma krava na farmama prvih četrnaest dana posle porođaja. Zbornik predavanja XIX seminara za inovacije znanja veterinara, 39-47, 1990.
2. **Petrujkić T., Vuković D., Mrvoš G., Jordanović B., Zupanc D.:** Preveniranje i suzbijanje steriliteta krava u velikim aglomeracijama. Veterinarski glasnik, 47, 4-5: 263- 267, 1993.
4. **Petrujkić T., Jovičin M., Suvajdžić Ljiljana, Milankov Dubravka, Jakovljević G., Džordžević V., Stojičević-Pantelić Vesna, Mičić R., Dimitrijević V.:** Lečenje endometritisa i akutnih mastitisa kod goveda upotrebom biljnih emulzija i ekstrakata sa dodatkom propolisa i kantariona. zbornik naučnih

LUCRĂRI ȘTIINȚIFICE MEDICINĂ VETERINARĂ VOL. XL, 2007, TIMIȘOARA

radova sa 16-og savetovanja agronoma, Veterinara i Tehnologa pkb, vol. 8. 1: 325- 328, pkb ini agroekonomik, Beograd, 2002.

5. Petrujkic T., Vukovic D., Šamanc H., Jordanovic B., Zupanc D.: Faktori koji odlučujuće deluju na servis period kod mlečnih krava. Veterinarski glasnik, 46, 9: 519- 522, 1992.

6. Stančić B.: O pitanju trajanja servis perioda u krava visoke mlečnosti (pregled). Savremena poljoprivreda, 37 (3-4) 171-182, 1989.

7. zeremski M., Korenić I., Vujošević J.: Terapija ranih postpartalnih endometritisa. Veterinarski glasnik, 35, 5: 513 - 517, 1981.