CONTROL OF OVULATION BY MEANS OF ULTRASONOGRAPHY AFTER DIFFERENT HORMONE TREATMENTS IN THE DAIRY COWS

A Répási¹, Á.Cs. Bajcsy², N Melo de Sousa³, JF Beckers³, A Bella³, O Szenci²

¹Kenézlő Dózsa Agricultural Ltd, Kenézló, ²Clinic for Large Animals, Szent Istvan University Faculty of Veterinary Science, Ullo, Hungary, ³Department of Physiology of Animal Reproduction, Faculty of Veterinary Medicine, University of Liege, Liege, Belgium

Fertility in lactating dairy cows decreased from 66% in 1951, to approximately 50% in 1975, and recently further decline (28% and 42%) was reported.

To synchronize the time of oestrus with PGF₂α is successful when cows are bred at a detected oestrus. This management does not control the time of AI, because oestrous detection continues to be necessary which is required by the lower pregnancy rate after timed AI comparing with AI after detected oestrus. Various attempts have been made to overcome this variability in response to PGF₂α treatments.

Primiparous and multiparous lactating dairy cows (after Day 40 post partum) with a mature corpus luteum (diameter of ≥ 17 mm) and having a follicle with a diameter of ≥ 10 mm were treated with PGF₂α (n=80) and if they showed oestrus were inseminated (G1: n=39). Cows after prostaglandin treatment (Day 0) were treated with GnRH on Day 2, and the animals were inseminated on Day 3 independently on the result of oestrous detection (G2: n=22). In G3 (n=27) cows after detected oestrus were inseminated and treated with GnRH at AI. Cows in G4 (n=73) after detected oestrus were inseminated and no hormone treatment was provided.

There were no significant differences among the groups in terms of reduction in the area of CL, and progesterone levels, and of an increase in the area of the dominant follicles during the examined period. However, in G2, P4 declined significantly (P=0.048 between Days 0 to 1 and P=0.015 between Days 1-2, respectively).

If AI was done together with a GnRH treatment (G3) the highest PR (55.6%) was achieved. Cows treated with PGF₂α and inseminated after oestrus (G1), have a 48.7% PR, while in cows that have been treated with PGF₂α and GnRH (G2), was only 36.4%. PR of the control cows (G4) was 43.5%.

The percentages of pregnant cows after AI at detected oestrus in G1 to 3 was the highest (62.5%, 56% and 68.4%, respectively) if AI was done on the same day as ovulation occurred. In G4 the PR was the highest if ovulation occurred on Day 1 (56%). Ovulation did not occur in 14 cows until Day 2 after AI (G1 to 4) and only one of them became pregnant.

When cows ovulated too early or too late in relation to the time of AI, PR was significantly lower, therefore, determination of the optimal time for AI is of great practical importance. If ovulation does not occur within two days after AI, a second AI may be warranted. However, further studies are needed to evaluate the benefit of a second AI.