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INDUCTION OF SUPEROVULATION IN CATTLE

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ABSTRACT

Induction of superovulation in the body of donors is the main task in embryo transplantation. If superovulation is successful and a large number of egg cells are released, we will get good results in transplantation. Folliculostimulating hormone (FSH) can also be used to induce multiple ovulations. Many researchers and scientists recommend selecting animals for embryo transplantation taking into account additional criteria reflecting hormonal status and metabolic activity potential. Gonadotropins can adversely affect the development of the fertilized egg after ovulation in animals. In some cases, the chances of developing follicular cysts in the ovary are also high.

KEYWORDS: Donor Animal, Recipient Animal, Superovulation, Transplantation, Metabolic Homeostasis, Folliculostimulant, Metabolic.

INTRODUCTION

Since the 1970s, research and applications in the field of transplantation have grown rapidly. In cattle, the calf was first frozen in 1973 and then obtained by transplanting thawed beef.

The analysis shows that 5,413 head of transplanted calves were received in Canada between 1973 and 1982, and by 1990, the number of transplanted calves in the United States (34th member of the International Society for Transplantation in 1984) had reached 500,000 and 12,000 in Russia.

In the last 12 years of the 21st century, record-breaking results have been achieved in breeding: 136 calves from one donor cow in the United States, 80 in France, 57 in Germany, and 216 calves from 44 donor cows at the Russian Livestock Research Institute.

The use of modern methods of induction of superovulation in livestock has been proven in practice and production to increase the maturation of ovaries in the ovaries by 10-20 times, ensuring simultaneous maturation of 25 eggs in cows and sheep, 40-45 in pigs, 5 in bees and 90 in rodents. From the best donors it is possible to get 5-8 times a year.

In animal husbandry, breeding animals are selected that have the ability to induce superovulation (maturation of multiple follicles) and obtain a viable ovary for long-term transplantation. In order to induce superovulation in donor animals, they are treated with various hormonal drugs (GSJK, follegon, pregmagon, etc.) - bovine bile blood serum is taken on days 60-90 of calving, FSH, etc.) according to a certain plan.

The Main Findings and Results

Many researchers and scientists recommend selecting animals for embryo transplantation taking into account additional criteria reflecting hormonal status and metabolic activity potential. These criteria, the ability of the donor to ovulate multiple times and the washing of viable embryos from him are of practical importance. It is believed that in order to obtain at least 8 ovulations and 7 embryos from the best donor, the amount of estradiol in the blood of cows at the beginning of the sexual cycle should be 15.3. Testosterone - 0.18 ng / ml, LH - 1, 46 IV / l in cows, progesterone levels ranged from 2.0 to 5.0 ng / ml (mean 3,150) and LH was 1.52 IU / l on day 10 of the reproductive cycle. Induction of superovulation in cattle Induction of superovulation when the level of cholesterol in the blood is not less than 3.55 mmol / l, b - carotene - 8.80 μ mol / l, vitamin A - 4.40 μ mol / l and alanine aminotransferase activity not less than 0.25 μ m gives an effective result.

In cattle, the use of GSJK (follegon) - gonadotropins in donor animals in the middle of the reproductive cycle (from 8 to 16 days) is a guarantee of good results. These drugs are administered once in a dose of 2-3 thousand XB, and after 48 hours prostaglandin F2-alpha analogues (estrofan, magestrofan, cloprostamol, superfan, clatraprostin, etc.) or one of its other synthetic analogues of these drugs are used. In donor cows, after 2 days, the sexual arousal phase of the sexual cycle begins, in which the phenomena of ejaculation, general arousal, sexual arousal and ovulation are clearly visible. Once these signs are observed, the donor animals are artificially inseminated.

In agriculture, follicle-stimulating hormone (FSH) can also be used to induce multiple ovulations. These hormones also have similar effects as GSJK. But doing this practice, getting

them, is a very complicated process. In farms, FSH prepared from the pituitary gland of sheep and pigs can be used to induce superovulation, and its inactivation in the body takes only a short time (5 hours). This drug is administered in a reduced dose twice a day for 5 days (5 mg in the morning and evening on the first and second days, 4 mg on the third day, 3 mg on the fourth day and 2 mg on the fifth day), resulting in a total of 10 doses of FSH good results can usually be obtained when sent from the 9th to the 11th day of the sexual cycle.

At present, standard gonadotropic hormones are used in the form of high-purity drugs: sergon (Czech Republic), folligon (Netherlands), premagon (Germany). These drugs are administered to donors according to the guidelines, once every 11-12 days of the sexual cycle, at a dose of 2000-3000 TB. corresponds to a live weight of 600 kg of the animal. The use of these gonadotropins ensures multi-grain ovulation in 75–80% of animals and an indexation of an average of 4.0–4.5 embryos per donor.

The advantage of GSJK is that it is easy to find biologically (if there are 60-90-day-old buffaloes, you can take blood from them and prepare a good specialist whey in any farm), and the disadvantage of this drug is that it takes a long time to inactivate the animal, the inactivation of gonadotropins in the body in which this drug is used takes an average of 6 days, but in experiments, drug residues can be detected in the blood even 10 days after drug administration. Gonadotropins can adversely affect the development of the fertilized egg after ovulation in animals. In some cases, the chances of developing follicular cysts in the ovary are also high. After observation of superovulation in livestock, it is recommended that a donor animal be given an anti-GSJKG serum.

CONCLUSION

GSJK (follegon) - good application of gonadotropins to donor animals (cows) in the middle of the sexual cycle (from 8 to 16 days). The drug is given to cows once in a dose of 2-3 thousand XB. After 48 hours, prostaglandin F2 (estrofan, magestrofan, cloprostenol, superfan, clatraprostin, etc.) or one of its other synthetic analogues is administered.

If the yellow body diameter in the cow's ovary at the time of gonadotropin injection is 1.5 cm, it is possible to expect effective results from superovulation. Poliomyelitis is reduced in bovine ovaries. In addition to a well-developed corpus luteum in the ovary at the time of drug administration, the intensity of multiple ovulation is also reduced if there is a developed follicle, follicular or luteal cyst. The effectiveness of superovulation is mainly determined by the physiological condition of the ovaries, and these indicators are taken into account.

The results of theoretical research and production experiments show that superovulation is considered effective when donor animals are given gonadotropic hormones that promote the growth and development of several follicles simultaneously in the middle of the reproductive cycle if at least 6 eggs are released. The main purpose of hormonal treatment in livestock is to ensure the separation of 10-20 eggs from the ovary by inducing superovulation.

Animals sent to GSJK are required to be fed a complete diet (protein, carbohydrates, vitamins, etc.) because starvation of animals can lead to a decrease in the number of ovulations.

REFERENCES

1. Eshburiev B.M. Veterinary obstetrics. Tashkent, Science and Technology Publishing House, 2018.
2. Fertility and Obstetrics in the Horse. Third Edition Gary C. W. England 2005 by Biacko' yell Sciency Ltd.
3. Veterinary obstetrics, gynecology and reproduction biotechnology.
4. A.P. Students, V.S. Shipilov, V.Ya. Nikitin and others; Ed. V.Ya. Nikitin and M.G. Mirolubov. - 7th ed., Perirab. and add. - M.: Kolos, 1999. -p. 495