THE INFLUENCE OF ANTISPERM ANTIBODIES ON THE FERTILIZATION OF BOVINE OOCYTES *IN VIVO* AND *IN VITRO*

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Summary. The aim of our study was to determine the influence of antisperm antibodies on the fertilisation of bovine oocytes *in vivo* and *in vitro*. Experiment I. We determined that cows remained infertile when they were inseminated 3 to 4 times with the sperm of the same bull (Solan), because of a large quantity of antisperm antibodies have developed in the blood serum (dilution of serum - 1:32). The titre of antibodies against the sperm of intact bull was small (dilution of serum - 1:32) (0.025>p>0.01). The control blood serum of the cows that were not inseminated reacted with the sperm of the bull Solan in dilutions 1:1, 1:4, 1:8. This shows that the specific antisperm antibodies prevent the fertilisation of oocytes in vivo, when cows are inseminated a lot of times with the sperm of the same bull. Experiment II. We injected a usual dose of sperm (about 15 mln of spermatozoa) under the skin to provoke the immune reaction of cows which have a small quantity of antisperm antibodies (dilution of serum - 1:8). We determined that the quantity of specific antibodies against spermatozoa of the examined bull increased on the 7th day (dilution of serum - 1:32) (0.05>p>0.025). The quantity of specific antibodies increased even more on the 14th day (dilution of serum - 1:64) (0.01>P>0.005). The quantity of antibodies against spermatozoa of the intact bull was small before sperm injection (dilution of serum - 1:4). It increased a little on the 7th day after injection (dilution of serum - 1:8) (0.2>p>0.1), but it decreased again on the 14th day (dilution of serum - 1:4) (0.5>p>0.4). The blood serum of the control group cows agglutinated the spermatozoa of the examined bull and the intact bull using the small dilution (when average dilution is 1:4) (p>0.5). Before immunisation IgG titre of blood serum of the examined cows was 2.2 to 3.37 times higher in comparison with the control cows. This titre decreased on the 7th day. It was the smallest on the 14th day. The IgG titre was higher by 500 mg/100ml in the follicular fluid of the immunised and the intact cows than in the blood serum of the control cows. The follicular fluid of immunised cows agglutinated spermatozoa of the examined bull in dilution 1:256. This fluid agglutinated spermatozoa of intact bull in dilution 1:4 (0.01>p>0.005). The oocytes of immunised cows matured 2,88% more than those of intact (0.025>p>0.01). Less than 35.67% of oocytes of this group developed on the 9th day after fertilisation in comparison with the control group (0.01>p>0.005). Oocytes of immunised cows developed 44.44% more to blastocysts stage in comparison with intact. These results show that the intensity of agglutination reaction in the blood serum and follicular fluid of immunised cows did not depend no on their IgG quantity. The high titre of IgG and antisperm antibodies had no influence on the maturation of oocytes in vitro, but decreased their development after fertilisation.

Keywords: antisperm antibodies, IgG, fertilisation, *in vivo*, *in vitro*.