

## Modeling of maternal sepsis in mini-pigs

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Maternal sepsis (MS) is a systemic inflammation caused by infection of the female genitourinary system during pregnancy, while or after giving birth, or after an abortion. By the WHO statistic the reason of every tenth death due to pregnancy and childbirth occurs due to the maternal sepsis. Medicine requires the discovery of new methods for the treatment of infectious diseases, which are tested on experimental animals. Previously, we conducted studies of the modeling of maternal sepsis in rats. In order to provide a transition from experiment to the clinical studies, it is reasonable to use large laboratory animals. The aim of this study was to develop a model of MS in minipigs with their clinical status assessment.

At the first stage of the experiment, acute peritonitis modeling was performed on the basis of the cecum ligation and puncture method. For this, a midline laparotomy was performed in male rats (n=3) under combined anesthesia. The distal third of the cecum was ligated with silk thread and then perforated with a 23 G needle. In the 3 days after operation, symptoms of intoxication developed in the rats and repeat laparotomy was performed. Peritoneal purulent exudate was collected in a syringe. At the second stage, after performing midline laparotomy both horns of the uterus of a mature female mini-pig was ligated at the base and the tubal end with the silk surgical thread (3.0). The operation went under inhalation anesthesia. Thereafter, rat purulent exudate was injected into the cavity of the horns until it was filled tightly. The uterine horns were placed in the abdominal cavity, the surgical wound was sutured in layers.

A day after the operation, clinical signs of inflammation began as generalized weakness, fever, tachycardia, and decreased motor activity. Within three days after the operation, tachycardia persisted, the signs of local peritonitis, such as intumescence in the projection of the uterine horns and local fever in the pelvic area, appeared. On the seventh day, the signs of inflammation regressed, repeat laparotomy was performed. The uterine horns were examined. The left horn had signs of an inflammatory process: hyperemia, edema, serous-purulent contents in its cavity. The tubal end of the left horn ligature became inconsistent, and therefore an abscess 3×3 cm in size, containing a gray-green liquid with an encapsulated ovary, was formed in the region of the left appendage.

The current study demonstrated that chosen method of modeling MS leads to formation of pelvioperitonitis. Thus, to simulate MS in minipigs, the organs of the genitourinary system should be influenced more radically.