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BACTERIAL CLINICAL MASTITIS ASSOCIATED WITH ABORTION IN DAIRY COWS.

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Introduction

Pregnancy loss (aborting) and mastitis are important health issues that affect dairy farms' profitability. Pregnancy loss has been linked to clinical mastitis as a consequence of endotoxins or inflammatory responses on follicular growth, embryo development, or corpus luteum survival.

The aim of the study was to identify the connection between abortions and the mastitis.

Material and methods

Black-and-white cows from a farm in the Central region of Russia, were used in this study. The state of pregnant cows (n=2087), whose productivity was 13 - 58 liters of milk a day, was studied. All study cows were diagnosed pregnant by transrectal ultrasonography on day 33 after timed artificial insemination (TAI). Case cows (n = 204) were those later diagnosed clinical mastitis or aborting. Control cows (n = 1 883) were those confirmed pregnant and calving.

At the second stage, samples of milk and vaginal mucus were taken from animals with abortions and the mastitis. Selective and differential media (HiMedia laboratories private limited, India) were used to isolate pathogens bacteria (*Clostridium perfringens*, *Staphylococcus aureus*, *Escherichia coli*, *Streptococcus agalactiae*, *Shigella* spp., *Enterococcus* spp., *Ps. aeruginosa*). To identify species the conventional biochemical methods were applied together with the API 20 E, API Staph, API 20 Strep test (bioMerieux SA, France).

Conclusion: *Ps. aeruginosa*, *E. coli*, *S. aureus* were isolated both from the organs of the reproductive system and from the milk of the cows who had abortions after suffering from mastitis, whereas no relationship was found between the microflora of the reproductive system and the udder of the cows whose abortions are not associated with mastitis.

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Results

During the study period 97 cases of clinical mastitis and 149 cases of abortion were identified. Abortions were observed in 42 out of 97 cows with registered clinical mastitis. It was found that cows that had a clinical mastitis form of during the first 45 days of pregnancy subsequently had the maximum number of abortions - 27 cases; in the period of 46-150 days of pregnancy 13 cases of abortion; in the period more than 150 days of pregnancy 2 cases. On the basis of bacteriological analysis, *Staphylococcus* spp., *Streptococcus* spp. and *Enterobacteriaceae* were isolated from milk of 42 aborted cows with the diagnosis of clinical mastitis. In total, 78 species of pathogens were identified, including *Ps. aeruginosa* (n = 25), *E. coli* (n = 14), *S. aureus* (n = 31), *S. saprophyticus* (n = 8). Also these bacteria were isolated both from the organs of the reproductive system and from the milk of the cows who had abortions after suffering from mastitis.

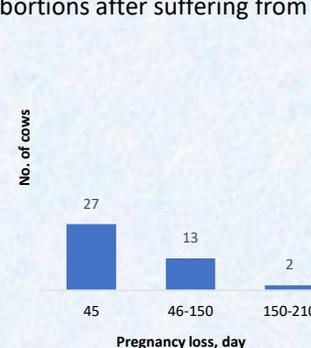


Fig. 1. Distribution of pregnancy loss according to day of pregnancy in cows from group CM+PL.

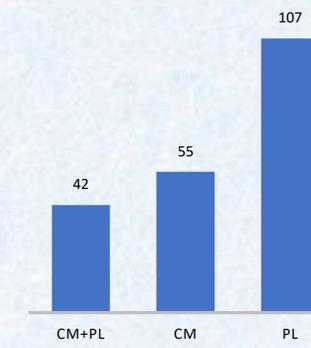


Fig. 2. Distribution of cows by groups: CM - clinical mastitis; PL - pregnancy loss (aborting); CM+PL - clinical mastitis and pregnancy loss (aborting).

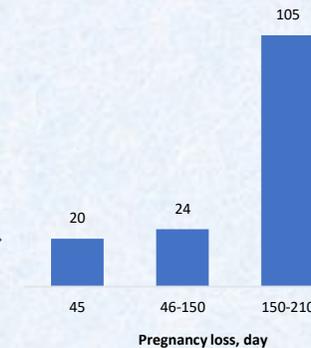


Fig. 3. Distribution of pregnancy loss according to day of pregnancy in cows from group PL.