

COMPARATIVE STUDY OF IMMUNOGLOBULIN CONCENTRATION BETWEEN HEALTHY COWS AND ANIMALS WITH CLINICAL ENDOMETRITIS (CE COWS)

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The study was designed to investigate the dynamic changes of IgA, IgGs and IgM in serum and uterine secretions of postpartum dairy cows.

Involved animals were limited to these aged from 3 to 8, with similar calving time and without other periparturient diseases. The animals were evaluated by eye view and confirmed *per rectum* on d21, 9 CE cows were enrolled in the evaluation and another 9 healthy animals were served as the control group. Serum samples and uterine secretions were collected on d21, d28, d35 and d42. All samples were kept on ice till laboratory handling or kept at -80°C freezer. The enzyme-linked immunosorbent assay (ELISA) was adopted for concentration analysis.

The results showed that:

1) The uterine mucus IgA concentration in healthy animals were consecutively decreases from d21 to d42, while in the CE cows reduced from d28 to d35, but significantly rose from d35 to d42. Serum IgA in healthy animals followed a decreasing manner and in CE cows the changes were fluctuated.

2) Uterine mucus IgGs in CE cows down regulated from d28 to d35, but significantly rose from d35 to d42, while in healthy animals the IgGs rises sharply from d28 to d35 and goes even higher on d42. But the serum IgGs in both healthy and CE cow generally down-regulated and did not changed much from d35 to d42. This significant difference between the serum IgGs and the uterine mucus IgGs concentration indicated an independent immune response of the uterus.

3) The serum IgM in the two groups showed a same decreasing manner, but in the uterine mucus, IgM in the CE cows maintained around 1.5 g/L while in the healthy animals less than 0.5 g/L during the period.

In summary, the uterine mucus IgA, IgG and IgM showed a different changing manner than the serum concentration, which indicated an independent immune response in the uterus environment. In the CE cows, IgGs and IgM plays the major role in defending invasiveness from outside, and the IgGs responded a week earlier than the IgA. The higher concentration of IgM in the uterus might serve as an indicator of CE cows, further studies were required to confirm the theory.

Keywords: DAIRY COWS, CLINICAL ENDOMETRITIS, IMMUNOGLOBULIN CONCENTRATION

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