DIAGNOSIS OF BOVINE SUBCLINICAL ENDOMETRITIS WITH UTERINE CYTOLOGY AND HISTOLOGY

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Introduction: Chronic endometritis is a common reproductive disease in dairy cows. It occurs with clinical symptoms or subclinically, both with negative effects on reproductive performance.

Objective: It was the aim of this study to compare uterine histology and cytology for diagnosis of bovine subclinical endometritis.

Material and methods: Dairy cows from 33 dairy farms in Northern Germany were examined by rectal palpation and vaginoscopy at 42 to 50 d postpartum. For this study, inclusion criteria were absence of abnormal vaginal discharge and abnormalities of the uterus (fluctuation) at rectal palpation. Cytobrush samples from the uterus were collected and the percentage of neutrophils (PMN) as indicators of endometritis (thresholds: ≥ 5 % or ≥ 10 % PMN) determined. Furthermore, biopsy samples from the endometrium for histological examination using routine methods were taken.

Results: Overall, from 285 animals, both types of samples could be obtained. Percent PMN ≥ 5 % and 10 % was 26.7 (n=76) and 16.8 (n=48), respectively. Histologically, endometritis was diagnosed in 105 cases (36.8 %). Only thirty-three (31.4 %) and 23 (21.9 %) of those samples had a PMN ≥ 5 % and 10 %, respectively. This was not statistically significantly different from samples with a negative histological result (22.2 % and 11.1 %, respectively, n=81). In 100 samples, a differentiation between purulent (n=9) and non-purulent endometritis was possible (n=91). Percent PMN ≥ 5 and 10 % was 77.8 vs. 27.5 and 66.7 vs. 18.7 for purulent vs. non-purulent endometritis, respectively (P< 0.05). Compared with cows with a negative histological result, cows with non-purulent endometritis did not differ, whereas cows with purulent endometritis had a higher percentage of samples with ≥ 5 or 10 % PMN (P< 0.05).

Conclusions: Our results suggest a relationship between % PMN in uterine cytobrush samples and histologically diagnosed purulent endometritis. However, sensitivity of cytology was below 80 %, when using histology as reference method. Non-purulent endometritis and other histologically diagnosed abnormalities of the endometrium with possible negative effects on reproductive performance, could not be identified reliably with cytology only.