

7 Summary

Evaluation of the cytobrush method for the detection of subclinical endometritis and the effect of a subclinically inflamed uterus on reproductive performance in dairy cows.

Chronic endometritis is a common disorder in post partum dairy cows. It causes depressed reproductive performance in the current lactation and economic losses. In practice, rectal palpation and/or vaginoscopy are generally used methods for the diagnosis of endometritis. The objective of this study was to evaluate a cytological method (cytobrush) as a diagnostic tool for the detection of subclinical endometritis in dairy cows. The effect of an inflammation in the uterus on reproductive performance was quantified. Holstein cows were examined by rectal palpation 21 to 27 days in milk (post partum check 1). Vaginal discharge was regarded as a sign for clinical endometritis. Cytological samples were obtained from the uterus of 407 clinically healthy cows by a modified cytobrush method (Kasimanickam et al. 1999). Cytological assessment determined the percentage of polymorphonuclear neutrophils (PMN) by counting an average of 300 cells. Two classes were defined. Cows with less than 5% PMN in the cytological sample were regarded as healthy cows while cows with more than 5% PMN were considered to have a subclinical endometritis. None of the cows was treated. Two weeks later 306 clinically healthy cows were re-examined by cytobrush method. At the first post partum check 41,3% of the clinically healthy cows were diagnosed having a subclinical endometritis. Fourteen days later only 16,4% showed more than 5% PMN whereas 83,6% showed less than 5% PMN.

Reproductive performance was determined for 375 untreated cows. Number of cows inseminated was significantly lower for cows with subclinical endometritis compared to healthy cows ($p < 0,05$). There was no major difference in days to first service or days open between the groups. Submission rate was 61,4% for both groups. First-service conception rate was numerically higher in healthy cows whereas conception rate was lower for this group. However, these parameters were not significantly different between cows with subclinical endometritis and healthy animals. The percentage of cows pregnant within 200 days in milk (DIM) was significantly lower in the group with cows having a subclinical endometritis. From this study it is concluded that subclinical endometritis can be diagnosed with the cytobrush technique. Cows with subclinical endometritis at 21-27 DIM showed depressed reproductive

performance. Further research is required to evaluate if subclinical endometritis can be treated efficaciously.