

תקציר באנגלית

The study's aim was to identify and quantify clinical or subclinical mastitis cows' pain during milking. Among the existing methods to assess mastitis decrease in milk production, changes in milk composition, and changes in cow mobility, duration and number of lying bouts, a decrease in food or water intake, and an increased pain response. The present study incorporated additional physiological measures such as pulse and breathing rates, as indicators of sympathetic system changes, and plasma proteins release. 40 cows were selected from a dairy farm located at Hefer Valley region. The cows were divided into four experimental groups, cows with clinical mastitis, cows with subclinical mastitis, cows with chronic mastitis and healthy cows in the control group. Measurements were collected before milking, during milking, and after. The activity index (weighting several steps in a given period of time, Afimilk Inc., Israel) was collected during the ten days prior to the experiment. It was hypothesized physiological indicators (heart rate, respiration), behavioral data, and the presence of blood pain proteins are linked to acute or chronic mastitis pain events. Although results demonstrated no significant difference in the average heart rate that could be attributed to the study group or a milking event, a significant difference in heart rate variability was found between the groups regardless of the milking event. Heart rate variability of clinical mastitis cow was significantly higher than the other groups. In addition, all cows had experienced increased respiration rate during milking. Examination of biochemical markers revealed a high presence of neurotransmitter B in the serum, which was found to be associated with acute pain. Finally, it was found that the pattern of activity varies between groups; the activity index among clinical, subclinical, and chronic cows is higher than in healthy cows. Specifically, the activity index of clinical cows rose even more on the day they were clinically diagnosed. Contrary to estimates, no unequivocal evidence was found at the level of respiration rate and pulse rate. The study reinforces the notion alteration in cow's behavioral pattern as well as the presence of specific proteins in the blood should be further examined, as they inform of changes in the cows clinical condition, particularly the transition from subclinical or chronic, to clinical mastitis.