

Studies on the effect of a single prolonged milking interval of 24h on well-being and health of dairy Holstein cows

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Key words

Cow, prolonged milking interval, animal well-being, animal welfare, over-bagging, dairy cow show

Aim of the study

To assess the effect of a single prolonged milking interval (PMI) of 24 h on the measurable signs of health and well-being in dairy cows in early and mid-lactation and to assess the effect of a non-steroidal anti-inflammatory drug (NSAID) on well-being during a PMI.

Material and methods (Formatvorlage Überschrift 2)

Fifteen Holstein cows were studied in early lactation (89.5 ± 2.7 days in milk) and were either administered NSAID or physiological saline in a cross-over design. Ten cows were studied again in mid lactation (151.6 ± 4.0 days in milk). Data on clinical signs of cows' health, behavior and well-being were collected, at 1 or 2 h interval, before and during a PMI of 24 h. Data from the last 6 h of a 12 h milking interval were compared with the last 6 h of the PMI.

Results and significance

The behavior of cows in early lactation (saline group) changed during the last 6 h of PMI, as we observed a decreased eating time (22.4 vs. 16.2 min/h), an increased ruminating time (13.3 vs. 25.0 min/h) and an increased hind limb abduction while walking (score: 41.7 vs. 62.2) and standing (31.2 cm vs. 38.9 cm). Udder firmness was increased (2.9 vs. 4.5 kg) during this period and more weight was placed on the hind limbs (46.4% vs. 47.0%). Pathological signs were found at the end of the PMI: all cows showed milk leaking and 10 of 15 cows developed edema in the subcutaneous udder tissue. Somatic cell count was significantly increased from 12 h to 72 h after PMI.

Administration of NSAID did not have a strong influence on the measured variables, except that the occurrence of edema was not significantly increased during PMI in the flunixin group (10 of 15 and 6 of 15 cows for saline and flunixin group, respectively). In the cows in mid-lactation, different variables were not significantly changed in PMI compared to the baseline values (e.g. eating and ruminating time, occurrence of edema and the abduction).

We conclude that the cows' health and well-being are compromised by a single PMI of 24 h, as their behavior is changed and pathological signs were recorded. NSAID administration had a slight effect on cows' well-being during a PMI. Otherwise, the stage of lactation had more effect on the cows' health and well-being, as fewer variables were changed in mid lactation.

Publications, posters and presentations

Kohler, P.; Alsaad, M.; Dolf, G.; O'Brien, R.; Beer, G.; Steiner, A. (2016) A single prolonged milking interval of 24h compromises the well-being and health of dairy Holstein cows. Vetsuisse-Nutztierabend 2015, oral presentation.

Kohler, P.; Alsaad, M.; Dolf, G.; O'Brien, R.; Beer, G.; Steiner, A. (2016) A single prolonged milking interval of 24h compromises the well-being and health of dairy Holstein cows. J Dairy Sci 2016; 66:1-14. Paper submitted as Dr. med.vet. Dissertation

Kohler, P.; Alsaad, M.; Dolf, G.; O'Brien, R.; Beer, G.; Steiner, A. (2016) A single prolonged milking interval of 24h compromises the well-being and health of dairy Holstein cows. WBC 2016, accepted for oral presentation

Project 2.14.03

Project duration April 2014 – March 2016