

the discriminant analysis, the TCa threshold level of 1.7 mmol/L minimizes the excess use of calcium salts to treat milk fever cows in this population at risk. The actual reference values for total serum calcium in dairy cows should be revised and a calcium level between 1.6 - 2.1 mmol/L (1.91 ± 0.29 mmol/L) would better describe the postparturient dairy cow population at risk of developing clinical milk fever.

The phosphorus levels between these 3 groups were significantly ($P < 0.05$) different and the TCa/P ratios were significantly different ($P < 0.05$) in down cows compared to standing cows. When dividing the cows into No Clinical Sign (NCS) cows ($n=46$), Stage I milk fever ($n=22$) and Stage II/III milk fever ($n=11$), the phosphorus levels were 1.30 ± 0.46 , 0.88 ± 0.47 and 0.41 ± 0.18 mmol/L respectively. The TCa/P ratios were 1.64 ± 0.62 , 2.07 ± 0.89 and 3.53 ± 1.34 respectively for the NCS, Stage I and Stage II/III milk fever. When using a cut-off point of 2.5 for the TCa/P ratio, as a diagnostic test in the clinical milk fever group, to determine the position of the cows (standing or down), the agreement between these criterias, as determined by the Kappa value, was 0.50 and the other test characteristics were 0.82, 0.73, 0.60, 0.89 respectively for the sensitivity, specificity, positive and negative predictive values. Interestingly, the phosphorus levels and the TCa/P ratios were significantly different in Stage II/III milk fever cows compared to Stage I. Knowing that the TCa levels were not different between the 2 milk fever groups, we can speculate that the serum

phosphorus level can be a potentially predisposing factor for down milk fever. Low serum phosphorus levels have been observed in clinical cases of milk fever and have been credited with an influence on the signs which occur (Radostits *et al.*, 1994). There is experimental evidence described by Daniel and Moodie (1979) to support this finding and it also seems probable that the hypophosphatemia could prolong the duration of recumbency. When using a cut-off point of 2.5 for the TCa/P ratio as a diagnostic test in the clinical milk fever group, it was found that when the cow is standing, the ratio is less than 2.5 in 73% of the cases (specificity) compared to 18% in the down cows (1 - sensitivity). Based on a prevalence of 33% of down cows in the clinical milk fever group, a TCa/P ratio of less than 2.5 predicts that cows should be standing 89% of the time (negative predictive value) compared to 40% of the time when the ratio is over 2.5 (1 - positive predictive value). This test (TCa/P ratio of 2.5) has a fairly good agreement ($\kappa=0.5$) with clinical findings and has the best combined test sensitivity and specificity compared to other calculated ratios in this study.

The role of phosphorus in the parturient paresis syndrome in not well understood. This study speculates that low serum phosphorus levels can be involved in the down cow syndrome and that we should also look at the calcium to phosphorus ratios when evaluating parturient paresis blood chemistry profiles in order to improve the success of the therapy.

Abstract

Neosporosis: Report of the International *Neospora* Workshop

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Neospora caninum is a protozoan parasite that was mistaken for *Toxoplasma gondii* until the mid-1980's. Although it was first identified in dogs, neosporosis has recently been recognized as a major cause of abortion in cattle, particularly dairy cattle, worldwide. The infection can be transmitted vertically over several generations, but how the cows acquired the initial infection is unknown. If horizontal transmission occurs, it is apparently infrequent. At present, veterinarians

can diagnose neosporosis and can document whether neosporosis is contributing to reproductive losses at a dairy. Until the definitive host is identified or a vaccine against the disease is developed, veterinarians can make few specific recommendations for prevention of this disease. There is currently no evidence that neosporosis poses any zoonotic risk. This workshop was made possible by special funds from Bayer AG and Bayer Corporation.