7. Summary

Examination of recumbent cows in consideration of the effectiveness of an additional therapy with an oral calcium phosphorus suspension

In the following study 188 cows being recumbent or showing clinical symptoms of parturient paresis were treated. The clinical signs of the animals were collected on a paper. A blood sample was taken from each patient before treatment to find out clinical-chemical parameters. In the following the group of cows were randomly allocated into a test group and a control group. Additional to the standard therapy, the test group was fed an oral calcium phosphorus suspension which was supposed to be tested for its effectiveness on cows suffering from parturient paresis. The success of the treatment was documented in a paper. In the end clinical and clinical-chemical parameters were evaluated. Target of the study was to show changes in clinical signs of recumbent cows. The study shows a change in the prevalence of clinical symptoms of the recumbent cow. Most of the cows only showed little clinical signs. The parturient paresis occurred more frequently in elder animals. 4.8% of the patients were primiparous. Most animals (119 animals) were laying in sternal recumbency. A decrease in rectal temperature was recorded in only 28,2% of the animals. The temperature of the body surface was within normal limits in 48,4% of the patients and was only mildly reduced in the auricular region in 26,7% of the cows. 30 animals were lethargic. 34% of animals had a retained placenta. In this connection the study showed a higher risk for animals suffering from parturient paresis to suffer from a retained placenta, but there was no relationship between the occurrence of retained placenta and the serum calcium and serum phosphorus levels. The examination of the clinical-chemical parameters showed, that there were more patients with hypophosphataemia (75,0%) than patients with hypocalcaemia (69,1%). None of the primiparous animals was hypocalcaemic and hypophosphataemic at the same time. Three primiparous animals were hypocalcaemic and six hypophosphataemic. All but one animal being lethargic were hypocalcaemic. Lethargic patients had significantly decreased serumcalcium, higher glucose, creatinkinase and bilirubin values than cows without lethargy. 37,2% of the patients showed an increase of ß-hydroxybutyric acid concentrations and were suspected to be ketotic. The bilirubin concentration was pathologically increased in 40,4% of the patients.

In consideration of the results of clinical-chemical examination the animals were placed in different groups representing different aetiology of the disease. Patients in group 1.1, which suffered from hypocalcaemia and hypophosphataemia, mostly showed severe hypocalcaemia

and hypophosphataemia. 19 animals were diagnosed with a single hypocalcaemia (group 1.2). 30 animals were diagnosed with a single hypophosphataemia (group 1.3). 28 animals being normocalcaemic and normophosphataemic and suffering from other reasons were placed in the groups 2-4. Cows that needed further treatments showed significantly higher values in creatinekinase, AST and bilirubin than animals that were successfully treated by one infusion therapy. Patients that where treated successfully showed a decrease in creatinkinase and AST values. In contrast to these findings the initial calcium serum level and serum phosphorus level had no influence on the healing process. The total cure rate of cows with parturient paresis was 85,1%. 72,9% of the patients where successfully healed with the initial treatment, 12,2% of the patients where healed with further treatments. Cows suffering from atypical parturient paresis could be successfully healed with the first treatment only. If this initial treatment was ineffective, a success did not occurre with further treatments.

The animals being divided into a test group and a control group for the examination of an oral calcium phosphorous suspension did not show any significant differences in clinical parameters. A significant decrease in serum chloride levels was found in the test group. All other clinical-chemical evaluations showed no difference in both groups. Therefore the results of both groups of animals can be compared without restriction. A significant improvement of the treatment could not be achieved by the administration of the oral phosphorus preparation. Due to the early gut stasis of animals suffering from parturient paresis the orally applied calcium and phosphorus could not be absorbed and therefore could not attain bioavailability in the diseased animal. The blood samples from control and test cows taken at three to six hours post the initial treatment showed no significant differences. Accordingly to this study the additional oral application of calcium and phosphorus did not improve the cure rate of recumbent cows in the peripartal period.