CHANGES OF CREATIN KINASE ACTIVITY IN BLOOD SERUM OF COWS WITH MILK FEVER

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Summary. Influence of the changes of calcium, phosphorus and magnesium levels on creatine kinase activity in blood serum of healthy cows and cows suffering from milk fever (with different clinical signs) was detected. Healthy cows (5-12 years old) after calving had hypocalcaemia (2.15±0.504 mmol/l), normal quantities of phosphorus and magnesium in blood serum. Calving process changes metabolic processes in cells, therefore during first days after calving the creatin kinase activity in blood serum of healthy cows was 1.5 times higher than normal level. In wintertime cows with milk fever had low levels of calcium and phosphorus, in summer time they had low levels of calcium, phosphorus and magnesium. Blood serum of cows with coma after calving contained calcium — 0.728±0.152 mmol/l and phosphorus — 0.475±0.443 mmol/l. The least quantity of phosphorus (0.380±0.340 mmol/l) was determined in blood of cows with atypical paresis after calving. Irrespective of clinical course of disease, activities of AST, ALT and AP were at normal levels, which indicated an absence of hepatic pathology. The creatin kinase activity was the highest (1,506±1,193 UI) in blood serum of cows with atypical paresis after calving. In summer time a low creatin kinase activity was determined in blood serum of cows with milk fever, because of low levels of magnesium, which play an important role in creatin kinase activity. Increased creatin kinase activity remains longer only in blood serum of cows with milk fever. It means that changes due to hypocalcaemia and hypophosphataemia in muscle cells remain for a long time and are hardly recovering.

Keywords: milk fever, coma after calving, cow, creatin kinase, calcium, phosphorus, magnium.