



Clinical field evaluation of a butafosfan + vitamin B12 compound (Phosphorum B12[®]/Catosal[®]) in the treatment of subclinical ketosis in dairy cows

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Subclinical ketosis (SK) is a metabolic disorder in high-producing dairy cattle characterised by abnormal levels of ketone bodies in blood, urine and milk in the absence of clinical signs. The inability of the cow to regenerate the energy lost to sustain the lactation leads in economic losses through decreased milk production and reproductive performance.

The objective of this study was to evaluate the effect of butafosfan and cyanocobalamin (Phosphorum B12[®] 10% injectable solution) on dairy cattle with subclinical ketosis. During February to September 2007, a negative-controlled, blinded, multicentre and randomised clinical study was carried out on 79 primiparous and multiparous animals reared in four Italian farms. One group (n = 42) was treated with Phosphorum B12[®] (KP) at a dose of 25 ml/animal i.m. once a day for five consecutive days, while the subclinical ketosis control (KC) group (n = 37) was not treated. Milk was collected from each cow and tested for the presence of β -hydroxybutyrate (BHB) – an indicator of abnormal fat metabolism that increases in cows with subclinical and clinical ketosis – using Ketolac[®] (Veterinaria AG) according to the score proposed by manufacturer. Appetite and bovine activity (measured by ALPRO DELAVAL System) were evaluated for 10 days postenrollment. Other additional parameters, as rectal temperature and symptoms of clinical ketosis, left displaced abomasum or other diseases, were recorded. Milk BHB \geq 200 μ mol/l was used as the cut-off value for diagnosis of SK while values < 100 μ mol/l were considered surely negative.

After 10 days postenrollment, the incidence of SK based on the milk test was statistically different between groups ($p = 0.0213$), with a significant decrease from 5th (48.65%) to 10th day (23.81%) only in the treated KP group ($p = 0.0129$). Inoculation of Phosphorum B12[®] increased the prevalence of cows cured (milk BHB < 100 μ mol/l) at the 5th day of treatment (16.67%) showing a statistical difference ($p = 0.0401$) vs. KC group (2.70%). Also, the treatment improved the average milk production to 27.53 l for KC group vs. 30.94 l for KP group ($p = 0.0106$). Even if the appetite reduced in both groups, only untreated cows showing a serious diminishment and anorexia at 5th day recorded a significant decrease ($p < 10^{-4}$) in the average of milk yield (19.27 l) in comparison to the animals with normal appetite (28.93 l). No differences were observed between groups in temperature, activity and other symptoms. The administration of Phosphorum B12[®] resulted in a sooner reduction of BHB levels in milk and in a better recovery of milk production.