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Effect of selenium or conjugated linoleic acid addition to milk replacer on plasma chitotriosidase activity in goat kid

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In the last years some substances have been observed as immunomodulators in neonate ruminants (Conjugate Linoleic acid -CLA- and Selenium). Recently an immune related enzyme, Chitotriosidase (CHT), have been described for the first time in non human mammals colostrum (goat colostrum). The aim of present study was to evaluate the effect of addition to milk replacer of selenium or CLA on CHT serum activity in goat kids. Two experiments were performed in order to clarify the aims. In the first experiment 20 Majorera newborn goat male kids were fed with colostrum for the first two days of life, and after that with milk replacer until day 60 of life. Ten animals received 1 ppm by day of selenium selenite and the other animals were used as control. In the second experiment 20 Majorera newborn goat male kids were distributed in two groups which were fed with different diets. During the first two days of life, all goat kids received colostrum and after that, until day 60, they were fed with milk replacer plus 20 or 40 g/kg DM CLA. In both experiments, blood samples were collected at 1, 2, 3, 4, 5, 10, 20, 30, 40, 50, 60 days of life. After centrifuge, plasma was obtained and frozen until analysis. CHT activity was measured using a synthetic substrate in a fluorescence assay. CHT activity increased during the first 60 days of life in all groups, starting at 1712 and finishing at 2834 nmol/ml/h. No effects of Selenium or CLA addition at two doses on CHT activity were observed. Previous studies have demonstrated the effects of Selenium or CLA on IgG transport or complement system activation. CHT activity might be regulated only by macrophage activation due to infectious agents and not by feed, but more experiences with more immunomodulators are needed.

Key words: goat kid, chitotriosidase, CLA, selenium