

THE ACID-BASE BALANCE IN NEWBORN KIDS BEFORE AND AFTER COLOSTRUM INTAKE

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The purpose of our study was to obtain physiological reference values in neonatal kids depending on the colostrum intake. The research was focused on the changes of acid-base balance and basic biochemical parameters in neonatal kids before and 2 hours after colostrum intake.

Total of 66 blood samples were taken from 33 neonatal kids. The samples were collected immediately after birth and 2 hours after first colostrum intake. Blood was collected from jugular vein and sample was analyzed immediately by the automatic acid-base analyzer. Blood pH, partial pressure of carbon dioxide ($p\text{CO}_2$), partial pressure of oxygen ($p\text{O}_2$), bicarbonate concentration (cHCO_3^-), base excess (BE), oxygen saturation (cSO_2), total carbon dioxide (TCO_2), sodium (Na^+), potassium (K^+), calcium (Ca^{2+}), chloride (Cl^-), glucose (Glu), lactate (Lac) and creatinine (Crea) were measured. The results obtained were tested for the homogeneity of variances (Hartley-Cochran-Bartlett test) and the normality of distribution (Shapiro-Wilk test). The data were analyzed statistically by one-way analysis of variance (ANOVA) followed by the Fisher LSD *post-hoc* test.

There were no statistically significant differences in acid base parameters such as $p\text{O}_2$, cHCO_3^- , TCO_2 , cSO_2 and biochemical parameters such as Na^+ , K^+ , Ca^{2+} between two groups — before colostrum intake (BF) and after colostrum intake (AF). There were statistically significant differences in acid base parameters such as pH, BE, $p\text{CO}_2$ between these groups. Acid-base values of pH, BE and $p\text{CO}_2$ and biochemical values of chloride and glucose were statistically significant on the $P < 0.001$ level. Values of lactate were statistically significant on the $P < 0.01$ level and values of creatinine were statistically significant on the $P < 0.05$ level.

The results presented in our study are important for veterinary practice and can improve the neonatal care especially for impaired kids. Furthermore, we would like to emphasize that there is a need for next research focusing on neonatal kids. As the goat farming is increasing there are still not sufficient information in this field compare to other domestic species.

Keywords: ACID-BASE BALANCE, BLOOD, KIDS, GOATS, COLOSTRUM

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