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NEUTROPHIL/LYMPHOCYTE AND PLATELET/LYMPHOCYTE RATIOS IN OBESE CHILDREN

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Inflammation plays a key role in obesity, where adipose tissue secretes pro-inflammatory substances that promote insulin resistance and atherosclerosis. Currently, neutrophil/lymphocyte ratio (NLR) and lymphocyte/platelet ratio (PLR) have been proposed as inflammatory markers. However, their role in obese children remains unclear. The aim of this work was to investigate NLR and PLR ratios and their correlation with proinflammatory molecules (soluble CD-40 ligand (sCD40L), monocyte chemoattractant protein 1 (MCP-1), and hs-CRP) in obese children. Forty-five obese children, from 7 to 14 years old (BMI > p^o97) and 20 healthy children (p^o15–84) according to age and sex, from Hospital del Niño Jesús, were studied. Age, weight, height, BMI, and waist circumference (WC) were recorded. The parameters evaluated were: NLR and PLR ratios, sCD40L, MCP-1, and hs-CRP. The data were expressed as mean ± SD and Pearson's coefficient was used to investigate correlations. Obese children showed significantly higher values of sCD40L (947 ± 272 vs. 109 ± 17 pg/mL; *P* = 0.0001), MCP-1 (157 ± 48 vs. 95 ± 18 pg/mL, *P* = 0.0001), hs-CRP (2.2 ± 1.7 vs. 0.53 ± 0.45 mg/L, *P* = 0.0001) compared to control group. However, NLR (1.50 ± 0.57 vs. 1.25 ± 0.57; *P* = 0.470) and PLR (113.00 ± 35.44 vs. 107.85 ± 42.25; *P* = 0.330) ratios exhibited no significant differences and there was no positive correlation between ratios and proinflammatory molecules. We concluded that NLR and PLR ratios were not useful as proinflammatory and cardiovascular risk biomarkers in obese children.

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LLAMA (*Lama glama*) ANTISERUM AGAINST SARS-CoV-2

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The receptor-binding domain (RBD) of SARS-CoV-2 Spike protein constitutes the key access for the virus inside the host cell. A positive correlation between titers of anti-RBD immunoglobulin G and antibodies (Ab) capable of neutralizing the virus has been demonstrated. In this context, passive immunotherapies such as convalescent plasma and hyperimmune equine serum have gained relevance as therapies against COVID-19. Another promising alternative is the use of polyclonal Ab from llamas (*Lama glama*), because of their unique features. For this reason, we aimed to obtain recombinant RBD as an immunogen to generate anti-RBD Ab in llamas. To achieve this, HEK 293 cells were transfected and transduced with the RBD encoding sequence, resulting in higher yields with this last method. The RBD was purified by affinity chromatography. An immunization schedule was designed and evaluated on two male animals, which were initially inoculated with RBD, followed by periodical boosters. Exploratory bleedings were performed in order to evaluate the reached titers, and larger bleedings in order to obtain enriched plasma with anti-RBD Ac. Ac quantification was accomplished by an “in-house” ELISA. Results showed that the immunization scheme was successful, achieving a maximum titer of 168000 at 28 days post-immunization. The results lay the foundations for the production of polyclonal anti-RBD Ab.

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BALANCED MICROMINERALS OF GESTATION AND LACTATION SOWS IN A SANTA FE FARM

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In order to achieve better management of animals and to obtain numerous litters with better weights at the time of weaning, microminerals composition in the balanced diet of gestation and lactation sows, at a farm in Santa Fe, was analyzed. A diet on corn, soy expeller, and enriched with the mineral-vitamin nucleus of inorganic origin was made. The minerals of nutritional importance such as copper (Cu), iron (Fe), and zinc (Zn), were analyzed by atomic absorption spectrophotometry (FAAS). All measurements were made in triplicate and the average value in each of the determinations was considered when comparing results. The mean values and standard deviations of the balance composition were: Fe (ppm) 201 -0.81; 170.3 -1.24; Cu (ppm) 10 -0.17; 16.1 -0.16; Zn (ppm) 168.3 -2.49; 102 -0.81 for physiological stages of gestation and lactation of sows in production respectively. Average values of Cu in the two stages are within the recommended values for several authors. The statistical differences (*P* < 0.05) in Fe and Zn between gestation and lactation, are due to the fact that these are minerals supplied in excess to avoid deficiencies and/or pathologies in fetal development. When compared with reference values available in international literature, the average values of minerals are higher than those recommended. The next step to investigate is a diet with microminerals from organic sources, for sows in both categories.

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