Cellular characterization and quantification of seminiferous epithelium in goats with and without bipartition of the scrotum

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Functionally, testicular parenchyma of the mammals can be divided in an extra- and an intraluminal compartments. The espermatogenics cells can be found in different stages of organization within the intraluminal compartment. This population of cells has its number varying through the lifetime. The aim of the study was to characterize and to quantify the population of cell residents into the seminiferous tubules of goats with and without bipartition of scrotum. Eighteen goats with age between 1 and 1.5 years-old, without defined breed, were classified according to the scrotal configuration in three groups (GI – without scrotal bipartition, GII – with bipartition up to 50% of testicular length and GIII – with bipartition more than 50% of testicular length). The animals were euthanized and the testicles fixed in Bouin solution during 24 hours. Fragments were processed routinely and embedded in paraffin. Sections were cut at 3 micrometer thickness, stained in hematoxiline and eosine and mounted on glass slides. The slides were evaluated from captured images (Leica Qwin). Cellular counting was effected in 20 transversal sections of seminiferous tubules in stage 1 of epithelium cellular cycle with 400x total magnification. This counting was confirmed using it following formula: gotten counting x [thickness of the cut/(thickness of the cut + √(DM/2)2 - (DM/4)2)]. The average diameter (AD) was acquired with the measure of 10 nucleus of each cellular type with 1000x magnification. Data were submitted to the Student-Newman-Keuls test ($p < 0.05$). The cells observed in the different study groups were spermatogones, primary spermatocits; spermatids rounded off and prolongated, Sertoli cells and mitosis. It was observed few variations during established cellular associations. About cellular counting, it was observed differences ($p < 0.05$) among all groups. The number of spermatogones, spermatocits, spermatids and Sertoli cells in first stadium of the cycle for GIII was 20.18; 25.37; 112.14; 9.46, for the GII, 19.36; 21.64; 96.71; 8.67, and for the GI, 18.10; 20.01; 94.69; 7.86, respectively. For the evaluated samples no significant differences were observed to associations of cells into the seminiferous epithelium, and the highest number of cells was identify in those animals that showed elevated degrees of scrotal bipartition (GIII), suggesting that these animals might be physiologies differences during spermatogenesis process.

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