

Morphologic and quantitative evaluation of preantral follicles of buffalo (*Bubalus bubalis*) in different reproductive phases

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ABSTRACT: The objectives of the present study were to estimate the population of the normal and degenerated preantral follicles of buffaloes in different reproductive phases and to classify the different types of degeneration of ovarian preantral follicles. For this, 18 ovaries were divided in three groups: prepubertal, non pregnant and pregnant adult females. The ovaries were collected from a slaughterhouse (Frigol – Brazil) and processed for classic histological examination. The follicular population was estimated according to Cahill et al. (1979) and calculated according to Gougeon & Chainy (1987). Young buffaloes, pregnant and non pregnant adults presented an average number of 15.5, 3.7 and 8.9 preantral follicles with normal morphology and type I (the degeneration was observed just in oocyte) and II (oocyte and granulosa cells were degenerated) degeneration, respectively. This experiment demonstrated that the proportions of primordial, primary and secondary follicles were affected by reproductive phase. A significant difference was observed considering the proportions of preantral follicles with normal morphology and Type I degeneration in all reproductive phases evaluated. The primary follicles presented more percentage of Type I degeneration than the others follicles and the primordial and primary follicles presented more percentage of Type II degeneration in three reproductive phases evaluated.

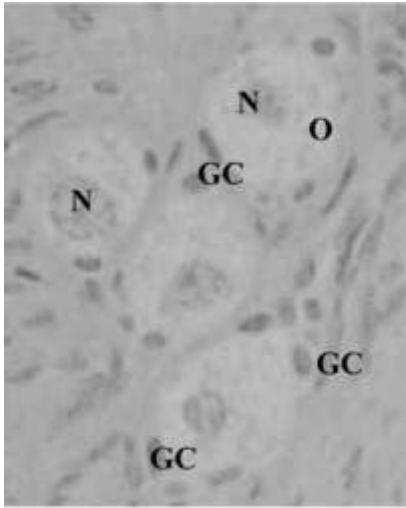
Key words: Buffaloes, Preantral follicles, Histology.

INTRODUCTION: The preantral follicles population in buffalo ovaries is almost 10 times less than in cattle, and it is probably the cause of a lesser number of antral follicles as compared with many other species (Mondadori et al., 2007). The objectives of the present study were to estimate the population of the normal and degenerated preantral follicles of buffaloes in different reproductive phases (prepubertal, non pregnant and pregnant adults) and to classify the different types of degeneration of ovarian preantral follicles.

MATERIAL AND METHODS - Buffalo ovaries were collected from a slaughterhouse (Frigol – Lençóis Paulista – SP – Brazil). Eighteen ovaries (one ovary of each female) were divided in three groups (6 ovaries for each group): prepubertal, non pregnant and pregnant adult females. After collection, the ovaries were washed in 70% ethanol for 10 seconds and in 0.9% saline solution twice. After washing in saline solution, the ovaries were cut longitu-

dinally. For the histologic study, ovarian portions were fixed in 10% formol solution for 24 h, dehydrated in ethanol and embedded in paraffin. Sequential sections (7 µm thick) were cut and stained with hematoxylin eosin. The follicular population was estimated according to Cahill et al. (1979) and calculated according to Gaugeon and Chainy (1987).

RESULTS AND CONCLUSIONS - This study showed that the buffaloes in different reproductive phases presented an average number of 15.5 preantral follicles with normal morphology (Figure 1) per ovary. Danell (1987) also observed a similar result. Young buffaloes, pregnant and non pregnant adults presented an average number of 3.7 and 8.9 preantral follicles with type I (Figure 2) and II (Figure 3) degeneration, respectively. This experiment demonstrated that the proportions of primordial, primary and secondary follicles were affected by reproductive phase. A significant difference (CATMOD, SAS) was observed considering the proportions of preantral follicles with normal morphology and Type I degeneration in all reproductive phases evaluated. The primary follicles presented more percentage of Type I degen-



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Figure 1.
Primordial follicles with normal morphology.
O: oocyte N: nucleus GC: granulosa cells
PAS-H 400x

Figure 2.
Primordial follicle with Type I degeneration.
O: oocyte N: nucleus PAS-H 400x

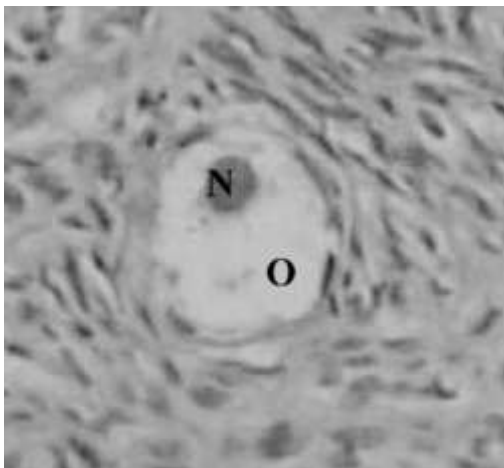
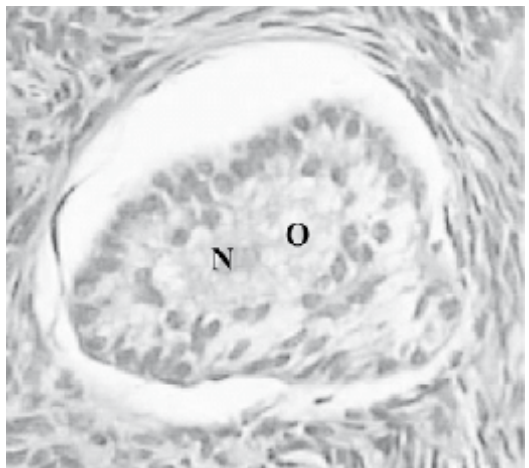


Figure 3.
Secondary follicle with Type II degeneration.
O: oocyte N: nucleus PAS-H 400x



eration that the others follicles and the primordial and primary follicles presented more percentage of Type II degeneration in three reproductive phases evaluated.

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