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Reduction of cellular activity in lacrimal glands as a consequence of increased apoptotic cell death (cleaved caspase-3) in of hyperprolactinemic female mice

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In this study the aim was to investigate the expression of cleaved caspase-3 in the lacrimal gland of hyperprolactinemic female mice. 40 adult female mice were randomly divided into two groups: Experiment I (induced hyperprolactinemia), the female mice were randomized in two groups of 20 animals each as follows: control group (Ctr1, 0.2 mL of saline solution), and experimental group (HPrl1, 200 µg/day of metoclopramide). Drugs were subcutaneously administrated during 50 consecutive days. After 50 days it was performed an examination of the vaginal smear and the animals were subsequently euthanized in proestrus phase (10 animals/group), their blood collected, and the lacrimal glands removed. IN Experiment II, carried out to analyze the lacrimal glands in pregnancy, the estrus females were placed together with males for mating. Two groups (10 animals in each) were formed: Control pregnant (Ctrl2) and experimental pregnant groups (Hprl2) and the treatments continued. From the 6th day of gestation, the animals were euthanized, their blood collected, and the lacrimal glands removed. Serum was isolated for prolactin (ELISA), estrogen, and progesterone (RIA) measurements. Afterwards, the lacrimal glands were removed and fixed in 10% formaldehyde and then processed for immunohistochemical analysis for the semiquantification of cleaved capase-3. Our data showed: the metoclopramide induced hyperprolactinemia- producing morphological signs of reduction of cellular activity in lacrimal glands during the proestrus phase and pregnancy as consequence of increased cell death by apoptosis. This effect might be related to the induced hyperprolactinemia and the decrease in the hormonal production of estrogen and progesterone.

Biography

Ariadne Stavare has completed her Bachelor's degree in Ophthalmic Technology from Federal University of São Paulo, Brazil. Currently she is a post graduate student of Morphology and Genetics Department at the Federal University of São Paulo. Since 2009 conducted experimental research with hyperprolactinemia and lacrimal glands.

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