ETHANOLIC EXTRACT *Athenaea velutina* DOES NOT CHANGE THE TISSUE STRUCTURE AND THE MORPHOMETRY OF EPIDIDYMIC REGIONS IN WISTAR RATS

SOUZA-COSTA, Luiz Pedro[1]
Master student in Structural and Cell Biology
PRAZERES, Jordana Luizi[2]
Doctoral student in Biochemistry
COIMBRA, John Lennon Paiva[3]
Master student in Structural and Cell Biology
LEITE, João Paulo Viana[4]
Organic Chemistry, Dr.
MACHADO-NEVES, Mariana[5]
Animal Science, Dr.

ABSTRACT

Athenaea sp. it is part of the Solanaceae family found in the Brazilian Atlantic Forest. This species is rich in secondary metabolites, such as whitanolideos and derivatives, that may act in the male reproductive organs altering morphometric parameters, generating reactive oxygen species, and impairing sperm viability. Up to date, there are no studies focused on the medicinal and toxicological potential of *Athenaea velutina* in the epididymis, which is the organ responsible for the sperm maturation process. Therefore, this work aimed to evaluate the effects of *Athenaea velutina* ethanolic extract on tissue structure and histomorphometry of the epididymis. For that, Wistar rats were divided into four experimental groups: CG: control, with animals treated with PBS; G250, G500 and G1000: rats treated with 250 mg/kg, 500 mg/kg and 1000 mg/kg of *A. velutina* extract, respectively. After 28 day of treatment, rats were euthanized and the epididymides were removed (CEUA/UFV number 82/2018). Epididymides were fixed in Karnovsky solution and processed for embedding in historesin. Images (n=10) from caput and cauda epididymis sections were obtained to perform histomorphometric analyses using the Image Pro Plus software. The parameters analyzed were epithelial height, tubular and luminal diameters (μm) in 20 fields. The results were submitted to ANOVA and Tukey tests. The differences were significant when $P<0.05$. Our results showed that in the epididymal tissue architecture, both of the head and tail, no histopathological changes were observed, the tubular diameters of the caput and tail epididymis did not differ between the groups in relation to the control ($P>0.05$), in the same way the height of the epithelium and the diameter of the lumen did not vary, either in the head or tail of the epididymis ($P>0.05$). In conclusion, the extract of *A. velutina* did not change the histopathology and histomorphometry of the caput and tail epididymis, suggesting that this extract is not harmful to male reproduction.

Keyword: Solanaceae; morphometry; epididymis; reproductive toxicology

[1] Federal University of Viçosa, Viçosa-MG, souzaluizpedro@gmail.com
[2] Federal University of Viçosa, Viçosa-MG, jordanaluizi@hotmail.com
[3] Federal University of Viçosa, Viçosa-MG, jlennonbio@gmail.com
[4] Federal University of Viçosa, Viçosa-MG, jpvleite@ufv.br
[5] Federal University of Viçosa, Viçosa-MG, mariana.mneves@ufv.br