389

Lorenzetti F[1], Seraphim D[1], Ortiz V[1], Bisogni S[1], Ferreira F[1], Dambros M[1]
1. *Federal University of Sao Paulo*

LOW TESTOSTERONE LEVELS INDUCE APOPTOSIS VIA ACTIVE 3-CASPASE DEPENDENT SIGNALING IN THE BLADDER WALL OF MALE RATS

Hypothesis / aims of study

The bladder can be considered a target organ for testosterone action, and low testosterone levels possibly cause damage to bladder cells. Decreases in circulating testosterone due to aging have been associated with bladder dysfunction. Senile and orchiectomized rats have been used as animal models for studying hypoandrogenism. We set out to study whether hypoandrogenism influences bladder wall cell damage in castrated and senile male rats.

Study design, materials and methods

Thirty male Wistar rats were divided into three groups of 10 animals each: group I (3-months-old), sham animals; group II (27-months-old), senile animals; group III (3-months-old), subjected to bilateral orchiectomy, and sacrificed eight weeks after the procedure. The bladders were rapidly excised, weighed and sent for analysis. Stereological assays on collagen fibers and immunohistochemical analysis with active 3-caspase were performed on the bladder cells.

Interpretation of results and conclusion

Bladder weights were greater in the senile group than in the other groups. Stereological collagen fiber analysis demonstrated higher density in group III than in groups I and II ($p<0.05$). The absolute density was 4.15 mm^3 in group I, 22.3 mm^3 in group II and 19.3 mm^3 in group III. Semiquantitative active 3-caspase analysis showed greater percentages in the senile group II than in groups I and III. Based on the data, it can be stated that low plasma testosterone levels are related to higher collagen fiber density and active 3-caspase percentages in the bladder walls of orchiectomized and senile rats, respectively.

References

1. Ludwig L, Seraphim D, Lorenzetti F, et al. Inhibitory activity of a-tocoferol on apoptosis in the rat bladder wall subjected to androgen deprivation. Neurourology and Urodynamics DOI 10.1002/nau.
2. Yassim AA, El-Sakka AI, Saad F, et al. Lower urinary-tract symptoms and testosterone in elderly men. World J Urol. 28:359-64; 2008.
3. Hall R, Andrews PL, Hoyle CH. Effects of testosterone on neuromuscular transmission in rat isolated urinary bladder. Eur J Pharmacol. 449:301–9; 2002.

Specify source of funding or grant	**None**
Is this a clinical trial?	**No**
What were the subjects in the study?	**ANIMAL**
Were guidelines for care and use of laboratory animals followed or ethical committee approval obtained?	**Yes**
Name of ethics committee	**Federal University of Sao Paulo Animal Ethics Committee**