



МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
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виявлено у старечих щурів, що можливо пов'язано зі зниженням рівня андрогенів в організмі та порушенням компенсаторних механізмів у зв'язку з інволютивними змінами органа.

COMPARISON OF FLUORESCENCE DYES FOR AMYLOID DETECTION IN PROSTATE STONES

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Prostatic calculi are predominantly inorganic deposits that readily found in prostatic glands. They are stained in a different manner than corpora amylacea, which are predominantly organic amyloid deposits and also readily found in ageing prostate. When prostatic calculi reach millimetre dimensions they can be easily extracted and analysed for composition purposes. The results of such an analysis suggest that prostatic calculi contain organic inclusions from various peptides. It is also believed that peptides forming organic part play crucial role in the biogenesis of prostatic calculi (Sfanos K.S. et al, 2009). A lot of authors support the idea of calculi formation by the mineralization process of corpora amylacea.

The goal of this work is the comparison of Congo Red and Thioflavin S staining for detection of amyloid deposits in prostatic stones.

Materials and methods. The study was conducted on 4 stones. Fixed in epoxy stones were polished with the grinding paper (800 grits). Carefully washed surface was covered with 1% aqueous solution of Thioflavin S for 8 minutes at room temperature. Then, the surface of the samples was washed 3 times in 80% ethanol for 1 minute and 1 time in 95% ethanol for 1 minute. Fluorescent microscopy was performed on an optical part of atomic-force microscope Bruker Bioscope Catalyst. After Thioflavin S staining the surface layer of stones was removed by additional polishing with the same grinding paper. Cleaned surface was stained with 1% of Congo Red water solution for 60 min and treated for 15 sec with 1% of sodium hydroxide solution. Fluorescence measurements were repeated.

Results. Polished stone surface have revealed ring layer structure demonstrating complex cyclic mineralisation process. All samples stained with Congo Red have shown no specific fluorescence. In turn, samples stained with Thioflavin S sharp point fluorescence between mineralisation layers. Indicating that amyloid deposits can be involved in the process of prostatic calculi formation. However the lack of Congo Red fluorescence put the question on dye specificity.

Thus, it can be summarised that connection between amyloid deposits and bio-mineralization requires further detailed studies.