

IMMUNOHISTOCHEMICAL AND MORPHOMETRIC STUDY OF ADENOHYPHYPHYSEAL GONADOTROPIC CELLS IN MALE CADAVERS OF DIFFERENT AGES

Jovana Čukuranović-Kokoris¹, Ivan Jovanović¹, Sladjana Ugrenović¹, Vesna Stojanović¹, Miljana Pavlović¹, Braca Kundalić¹, Vladimir Živković¹, Milorad Antić¹, Rade Čukuranović¹

¹University of Niš, Faculty of Medicine, Department of Anatomy, Niš, Serbia

Contact: Jovana Čukuranović-Kokoris
81 Dr. Zoran Djindjić Blvd., 18000 Niš, Serbia
E-mail: jovana.cukuranovic.kokoris@medfak.ni.ac.rs

The literature data suggest that with advancing age there occurs a functional decline in the gonadotropic cells, while the data concerning structural changes in these cells are rather scarce. The aim of this paper was to detect and quantify the changes in human gonadotropic cells of the anterior pituitary in male cadavers of different ages using immunohistochemical and morphometric methods. The material in this study consisted of adenohypophyseal tissue from 14 male cadavers of different ages, starting from the fourth decade of life. Adenohypophyseal tissue sections were routinely histologically processed and stained with immunohistochemical monoclonal anti-LH antibody to detect gonadotropic LH cells. Digital images of the visual fields of immunohistochemically processed adenohypophyseal sections were then morphometrically analyzed using the Image J system. Statistical analysis was performed using the SPSS statistical software package. The results of the morphometrical analysis showed that volume density of LH cells did not change significantly with advancing age, while their area, perimeter and Feret's diameter increased statistically significantly. Nuclear morphometric parameters did not change significantly, while the nuclear-cytoplasmic ratio of LH cells decreased with ageing, with a statistically significant decline observed in cases aged over 70 years. Based on the obtained results the conclusion may be drawn that the density of LH cells does not change significantly with ageing, but that they undergo hypertrophy in order to maintain normal hormonal secretion. Long-lasting hypertrophy of these cells ultimately leads to their functional decline, which reaches statistical significance after 70 years of age.

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