Abstract

„20S proteasome in the blood plasma of boys with cryptorchidism"

"Overexpression of ubiquitin carboxyl-terminalhydrolase 1 (UCHL1) in boys with cryptorchidism"

Purpose: To evaluate the concentration of 20S proteasome and UHCL1 in the blood plasma of boys with cryptorchidism.

Methods: Patients—50 boys aged 1–4 years (median = 2.4 years) with unilateral cryptorchidism. The control group—50 healthy, age-matched boys (aged 1–4 years, median = 2.1 years), admitted for planned herniotomy. In our study, we used a novel technique Surface PLASMON RESONANCE Imaging.

Results: The median concentration of 20S proteasome in the blood plasma of boys with cryptorchidism was 2.5-fold higher than in boys with inguinal hernia. We noticed statistically significant difference between 20S proteasome levels in boys with cryptorchidism up to 2 years old and above 2 years old.
The median concentration of UCHL1 in the blood plasma of boys with cryptorchidism, was 5-folds higher than in boys with inguinal hernia, whose testicles were located in the scrotum. We also noticed statistically significant difference between UCHL1 levels in boys with cryptorchidism up to 2 years old, and above 2 years old. Older boys, whose testicles since birth were located in the inguinal pouch or in the abdominal cavity, had higher concentration of UCHL1 in their blood plasma, than boys from younger group. In the group of cryptorchid boys, we also found slightly lower concentrations of INSL3, without statistical significance and no correlation with UCHL1 levels.

Conclusions: We believe that the 20S proteasome and UCHL1 concentrations in the blood plasma of boys with cryptorchidism reflect the heat-induced apoptosis of germ cells.

"Epidemiology, pathophysiology, and pathogenesis of cryptorchidism. Evaluation and treatment of undescended testicle."

Cryptorchidism – the absence of one or both testes in the normal scrotal position – is the most common birth defect of the male genitalia. In full-term newborn boys its incidence is estimated at 2–5%. During the first three months of life, in half of these boys the testicles will descend spontaneously into the scrotum, but at the end of the first year of life 1% of boys will have cryptorchidism. Among boys born prematurely, about 30% of them have undescended testicles at birth, but also in such cases approximately 80% of undescended testes descend by the third month of life. The authors discuss the epidemiology, pathophysiology, aetiology, and treatment of undescended testicle in boys.