9 - Molecular Cell Biology

PO-085 - (23902) - DIFFERENTIAL EFFECT OF JUVENILE DIABETES ON SPERMATOGENESIS IN RELATION TO ANDROGEN PRODUCTION AND ACTION

E. Pavlova (Bulgaria)[1]; R. Ivanov (Bulgaria)[1]; D. Abadjieva (Bulgaria)[2]; Y. Gluhcheva (Bulgaria)[1]; E. Petrova (Bulgaria)[1]; I. Vladov (Bulgaria)[1]; E. Lakova (Bulgaria)[3]; N. Atanassova (Bulgaria)[1]

1 - Institute of Experimental Morphology, Pathology and Anthropology with Museum, Bulgarian Academy of Sciences; 2 - Institute of Biology and Immunology of Reproduction, Bulgarian Academy of Sciences; 3 - Medical University, Pleven

Ekaterina Pavlova
Sofia

Rosen Ivanov
Sofia

Desislava Abadjieva
Sofia

Yordanka Gluhcheva
Sofia

Emilia Petrova
Sofia

Ivelin Vladov
Sofia

Emilia Lakova
Pleven

Nina Atanassova
Sofia

No

Diabetes mellitus (DM) affects several aspects of male reproductive health. We aimed to evaluate effect of juvenile diabetes on spermatogenesis in relation to androgen production and action.

Diabetes was induced by single i.p. injection of streptozotocin on day 1 (neonatally, NDM) or day 10 (prepubertally, PDM) of male Wister rats and testes were sampled on day 45. A**ndrogen receptor (AR) and testicular angiotensin converting enzyme (tACE) were immunohistochemically visualized. Number of germ cells (GC) was estimated. Serum glucose and testosterone were assayed. On day 65 computer-assisted semen analysis was performed.**

Glucose levels increased in NDM and PDM by 27% and 93% respectively. Testis weight was reduced only in PDM group manifested by incomplete spermatogenesis and significantly decreased total GC number (28% lower than control). H**yperglycemia did not affect spermatogonia and spermatocyte number in contrast to spermatids which were elevated in NDM and diminished in PDM. Partial or complete loss of tACE positive elongated spermatids was visualized i**n all 14 stages of the spermatogenic cycle in PDM. **Testosterone level decreased in PDM and lack of stage specific expression of AR in Sertoli cells was seen. Semen analysis showed reduced sperm concentration, more**

pronounced in PDM than NDM. Significant elevation of round (undifferentiated) cells in samples was found in NDM.

When the first wave of spermatogenesis occurs **juvenile diabetes can affect testicular cell populations manifested by** negative **changes in hormonal profile and semen quality.**

Acknowledgements: The study was supported by Grant No KP-06-N71/7 from the Bulgarian National Science Fund.

Palavras-chave : germ cells, androgens, diabetes