

The influence of quantitative alterations of steroid hormones on energy metabolism of prostate tumors

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Alteration in Steroid Hormone Levels and its Effect on Energy Metabolism in the Tumor Tissues of the Men with Prostate Tumors

Mechanism of action and metabolism of steroid hormones have a key role in cancer progression and development of hormone resistant form of tumor. Carcinogenesis is a complex, multistep process, that is greatly depends on the action of cellular anticancer mechanisms, such as: anti-proliferative responses, induction of apoptosis and biological aging. All the mentioned mechanisms require a great deal of energy. Mitochondria represent an important mediators during oncogenesis. They contribute to tumorigenesis not only from bioenergetic point of view, but by means of other factors as well: these organelles change biogenesis and turnover, regulation of oxidative stress, cell death susceptibility, metabolism and signaling.

The aim of the work was to study the alterations in steroid hormone levels and its effect on energy metabolism in the tumor tissues of the men with prostate tumors.

On the basis of conducted investigations significant quantitative alteration of steroid hormone levels was established in benign as well as malignant prostate tumor tissues. As for energy metabolism, sharp alterations in anaerobic as well as aerobic respiration was observed.