6. ESTROGEN THERAPY - METABOLIC AND CLINICAL CONSEQUENCES

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Introduction. Estrogen therapy has been a cornerstone in the treatment of various medical conditions, especially in menopausal management symptoms, preventing osteoporosis and addressing gynecological concerns. However, the administration of exogenous estrogen is not without its involvements, as the therapeutic benefits are accompanied by a spectrum of potential side effects. As the utilization of estrogen therapy becomes progressively widespread, a nuanced understanding of the associated risks is paramount. Among the risks, a significant focus has been established on its potential link to endometrial and breast cancers.

Aim of study. The aim of this review is to explore the intricate connection between estrogen therapy and the risks of developing endometrial and breast cancer.

Methods and materials. A comprehensive array of articles from PubMed, HINARI, NCBI, Google Scholar knowledge bases over the last ten years describing the quintessential role of estrogen in understanding the wide influence in oncogenesis and metabolic pathways. Usual used keywords: estrogen, breast cancer, endometrial cancer.

Results. The relationship between estrogen therapy and tumorigenesis is multi-faceted. Estrogen, while playing a fundamental role in mammary gland maturation, development, has been implicated in the growth of hormone receptor-positive breast cancers, highlighting the crucial contribution of estrogen receptors which are drivers of estrogen receptor positive breast cancer. However, when exposed to BRCA mutation or high levels of estrogens such as in the hormonal therapy, the proliferative effect of these steroids may cause cumulation of replication errors inducing to mutagenic and mitogenic consequences, triggering DNA damage in epithelial cells progression of breast cancer. Another target of estrogenic background is endometrial malignancy. Clinical evidence implies that combined hormone therapy, like estrogen and progestin, may decrease the risk of endometrial cancer in reference to estrogen therapy. This unbalance of progesterone insufficiency and estrogen predominance leads to amplification of estrogen receptors α which promotes endometrial cell proliferation and increases the tissue hyperplasia, an obvious cancer condition.

Conclusion. By bringing into focus the intricate interplay between therapeutic benefits and drawbacks of estrogen therapy, this research seeks to unravel the intricacies of hormonal balance in the human body. The widely accepted viewpoint is that estrogen serves as an instigator for the advancement of cancerous cells, so the risk is additionally shaped by factors such as family history, genetic predisposition, the age of patient, duration of therapy and the medication doses.