

## 291. THE GLEASON GRADING SYSTEM FOR PROSTATE CANCER

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**Introduction:** Prostate cancer is currently one of the major health problems of men. According to the latest updates provided by the Center of Statistics and Cancer Registry of the Oncology Institute of Republic of Moldova (OIM) during 2000-2009, the number of prostate cancers, diagnosed de novo in the Republic of Moldova, shows a continuous increase from 85 cases for 2000 to 249 cases in 2009. According to mortality rate among the male population it was registered a prostate cancer percentage growth from 4.1% in 2000, up to 8.1% in 2009.

**Discussion and results:** Prostate cancer is a very common and very unpredictable form of cancer. Mostly the prostate adenocarcinoma is expressed as a multifocal disease. Histological grading of prostate carcinoma is an important step in defining of prognostic and of the therapeutic behavior. Although there are numerous grading system of prostatic carcinomas, the Gleason system represents a special importance, due of reproducibility but also due of utilization in most institutions and in the specialized literature. The Gleason histological grading scheme is based exclusively on the microscopic aspects of tumor glands at low magnification and, in contrast to other grading systems, disregards aspects of cytology. The Gleason system aims to identify two architectural aspects - the primary model, which is predominantly and secondary model. Both models are denoted by 1-5 grade (grade 1 being the most differentiated cancer and grade 5 the most poorly differentiated or undifferentiated carcinoma). It is considered that prognosis of the disease is influenced by both the architectural aspects of primary and secondary, they are added up to give a combined grade Gleason - Gleason score. The cancers with a higher Gleason score are more aggressive and have a worse prognosis.

**Conclusion:** The diagnosis and staging of prostate cancer is very important for determining treatment and Gleason score calculation can be used for determining the risk of prostate cancer recurrence.

**Key words:** prostate cancer, Gleason system, prognostic.

## 292. THE STROMA INFLUENCE IN BREAST CANCER DEVELOPMENT

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**Introduction:** The complex process between cancer invasion and stroma response is still being elucidated, but is clear that cancer is a disease of more than just malignant cells. The tumor interstitial fluid has an important role in initiating the immune response. Determining the composition of tumor interstitial fluid can give us information about poor or good prognosis. Moreover, access to breast cancer's stroma permits us to identify the substances that can be used in early detection and monitoring

the disease activity. Our aim is to summarize the recent studies on peri-tumoral stroma and tumor interstitial fluid compared to normal mammary gland structure and use the results for early diagnosis, monitoring disease and maybe change the therapeutical targets.

**Materials and Methods:** The study represents a literature review and is based on state-of-the-art information collected from 12 articles on breast cancer development from PubMed.

**Results:** In comparison to normal mammary gland structure, in the peri-tumoral stroma of breast cancer there are increased alpha smooth muscle actin, collagen IV, hyaluronan, fibroblast activated protein, myeloid-derived suppressor cells, cancer Associated adipose and a variety of host cells including macrophages and fibroblasts. Elevated expression of hyaluronan, tumor Associated macrophages, vascular endothelial growth factor-A, myeloid-derived suppressor cells- tell us about a poor prognosis. Numerous studies have demonstrated that inhibition of hyaluronan synthesis using 4-MU, tyrosine kinase inhibitor imatinib, aromatase inhibitor letrozole reduce breast cancer tumor cell proliferation and migration.

**Conclusion:** Current therapies target primarily the carcinoma cells, although many women have recurrent disease or/and develop metastases. This study demonstrates the importance of tumor microenvironment in mammary cancer development and the necessity to apply the treatment that will includes both the stroma and the cancer cells.

**Keywords:** breast cancer, tumor interstitial fluid, peri-tumoral stroma, tumor microenvironment.

## **293. RETINOBLASTOMA: GENETIC BACKGROUND, MODERN DIAGNOSTIC METHODS AND THERAPIES**

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**Introduction:** Retinoblastoma is a rare malignant eye tumor that develops from the embryonic tissue of retina. This disease is one of the classic examples of monogenic diseases. It develops due to a mutation of RB1 gene, which is located on chromosome 13 in the 13q14 locus. It should be noted that about 90% of all cancers of the eyes in children under 5 years of age are caused by RB1 mutations. Thus the study of modern methods of diagnosis and treatment of retinoblastoma can be effectively applied as a model for the treatment of other cancers caused genetically.

**Material and Methods:** In this study we performed a comprehensive review of medical data for the last 10 years using PubMed, Scopus and IBN to study the incidence, prevalence, causes, symptoms, and modern methods of treatment of this disease.

**Discussion results:** There is no doubt that the main cause of this disease is different mutations in both alleles of the retinoblastoma tumor suppressor gene - RB1, or a mutation in one allele, but with obligatory deactivation of another. About 60% of retinoblastomas are not hereditary, and in most cases are unilateral, with a medium age of diagnosis being 2 years. Retinoblastoma can also be bilateral and