

## **Abstract**

Brain gliomas represent a heterogeneous group of tumors of various histological subtypes which differ according to their response to treatment and prognosis. Tumors created from astrocytes and oligodendrocytes occur most often. During brain tumor onset and progression, the genomic aberrations in brain glioma cells play an important role.

Diagnostic detection of diffuse glioma tumors based on cell morphology is subjective. Due to their locations and diffuse character, glioma treatment is still a problematical issue. Therefore, new diagnostic and prognostic techniques must be developed which would make a more effective treatment possible, resulting thus in lower morbidity and mortality rates. An option is to sub-classify patients into diagnostic groups based on detection of specific chromosome aberrations detected by combination of I-FISH and microarray techniques. Use of molecular cytogenetic methods not only contributes to more precise diagnosis and prognosis for patients with diffuse glioms, but also to better understanding of the pathogenesis of brain tumors.

### **Keywords:**

Brain glioma, genomic aberrations, astrocytic tumors, oligodendroglial tumors, molecular cytogenetic methods