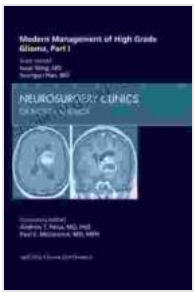
Modern Management of High-Grade Glioma: An Issue of Neurosurgery Clinics

High-grade gliomas (HGGs) are the most common and aggressive type of brain tumor. They account for approximately 50% of all malignant brain tumors and have a median survival of less than 1 year. The standard of care for HGGs has been surgery followed by radiation therapy and chemotherapy. However, despite these treatments, the prognosis for HGGs remains poor.



Modern Management of High Grade Glioma, Part I, An Issue of Neurosurgery Clinics (The Clinics: Surgery Book 23) by Isaac Yang

★★★★★ 5 out of 5

Language	: English
File size	: 1948 KB
Text-to-Speech	: Enabled
Screen Reader	: Supported
Enhanced typesetting	: Enabled
Print length	: 355 pages

Molecular Biology of HGGs

In recent years, there have been significant advances in the understanding of the molecular biology of HGGs. This has led to the identification of several key genetic alterations that are commonly found in HGGs. These alterations include mutations in the TP53, IDH1, and EGFR genes.

The TP53 gene is a tumor suppressor gene that is responsible for repairing DNA damage. Mutations in the TP53 gene can lead to the accumulation of DNA damage and the development of cancer. IDH1 is an enzyme that is involved in the production of energy. Mutations in the IDH1 gene can lead to the accumulation of a metabolite that can promote the growth of cancer cells. EGFR is a receptor tyrosine kinase that is involved in cell growth and proliferation. Mutations in the EGFR gene can lead to the activation of EGFR signaling and the development of cancer.

Targeted Therapy for HGGs

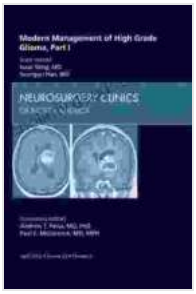
The identification of these key genetic alterations in HGGs has led to the development of new targeted therapies. These therapies are designed to specifically inhibit the growth of cancer cells that have these alterations.

One of the most promising targeted therapies for HGGs is bevacizumab. Bevacizumab is a monoclonal antibody that targets VEGF, a protein that is involved in the formation of new blood vessels. By inhibiting VEGF, bevacizumab can cut off the blood supply to cancer cells and prevent them from growing.

Another promising targeted therapy for HGGs is erlotinib. Erlotinib is a tyrosine kinase inhibitor that targets EGFR. By inhibiting EGFR, erlotinib can block the growth and proliferation of cancer cells.

The development of targeted therapies has significantly improved the outlook for patients with HGGs. These therapies are now being incorporated into the standard of care and are helping to improve the outcomes of patients with this aggressive type of brain tumor.

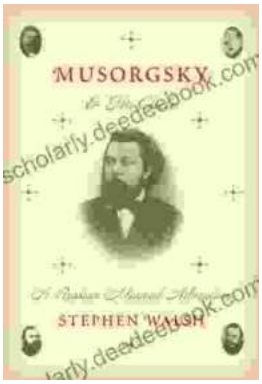
References



Modern Management of High Grade Glioma, Part I, An Issue of Neurosurgery Clinics (The Clinics: Surgery Book 23) by Isaac Yang

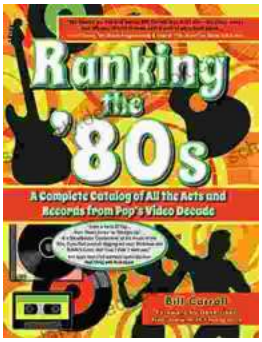
★★★★★ 5 out of 5

Language	: English
File size	: 1948 KB
Text-to-Speech	: Enabled
Screen Reader	: Supported
Enhanced typesetting	: Enabled
Print length	: 355 pages



Musorgsky and His Circle: A Russian Musical Revolution

Modest Mussorgsky was a Russian composer who played a pivotal role in the development of Russian classical music. He was a member of the "Mighty Handful," a group of...



Ranking the 80s with Bill Carroll: A Nostalgic Journey Through Iconic Pop Culture

Prepare to embark on a captivating expedition through the vibrant and unforgettable era of the 1980s. Join renowned pop culture expert Bill Carroll as he expertly ranks...