Review Cancer Lett. 2024 Aug 7:217154. doi: 10.1016/j.canlet.2024.217154.

Online ahead of print.

Understanding Spinal Cord Astrocytoma: Molecular Mechanism, Therapy, and Comprehensive Management

Bo Pang [1], Songyuan An [2], Yun Liu [2], Tao Jiang [3], Wenqing Jia [4], Ruichao Chai [5], Yongzhi Wang [6]

Affiliations

PMID: 39121902 DOI: 10.1016/j.canlet.2024.217154

Abstract

Spinal cord astrocytoma is a rare and highly debilitating tumor, yet our knowledge of its clinical characteristics, molecular features, and pathogenesis remains limited compared to that of its counterparts in the brain. Current diagnostic and therapeutic approaches for spinal cord astrocytomas are primarily based on established guidelines for brain astrocytomas. However, recent studies have revealed unique clinical and pathological attributes that distinguish spinal cord astrocytomas from their corresponding brain counterparts. These findings underscore the inadequacy of directly applying the clinical guidelines developed for brain astrocytomas to spinal astrocytomas. In this review, we provided an up-to-date overview of the advancements in understanding spinal cord astrocytomas. We also discussed the challenges and future research prospects in this field with the aim of improving the precision of diagnosis and therapy for these tumors. Specifically, we emphasized the importance of enhancing our understanding of the molecular heterogeneity, immune characteristics, and clinical trials of spinal cord astrocytomas.

Keywords: DMG; H3 K27altered; Liquid biopsy; Spinal cord tumor; Tumor microenvironment.