



Treatment Strategies and Outcomes for Spinal Low-grade Gliomas: A Systematic Review of the Past Quarter Century

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Available online 6 May 2026, Version of Record 8 June 2026.

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<https://doi.org/10.1016/j.nec.2026.03.008>

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Section snippets

Key points

- Spinal low-grade gliomas (sLGGs) are a distinct and rare subset of slow growing gliomas. ...
- While brain gliomas have been extensively studied, sLGG research has been limited due to the rarity of this tumor. ...
- The rarity of sLGGs complicates the development of standardized treatment protocols and comprehensive guidelines. ...
- There is a clear need for further sLGG research to consolidate data, standardize treatment approaches, and improve outcomes. ...

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Abbreviations ...

BRAF B-Raf proto-oncogene

CD34 cluster of

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Study Design and Registration

A systematic review was carried out in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.²⁶ The study has been registered in the Open Science Framework database under the identifier 2U6TN. ...

Search Strategy and Eligibility Criteria

The literature search was conducted using the MEDLINE (PubMed), Web of Science (Clarivate), Scopus (Elsevier), Directory of Open Access Journals (DOAJ), and Google Scholar databases on July 20, 2024, with a repeat search conducted during the study ...

Characteristics of Included Studies and Patients

Geographically, most studies originated from the United States (25 studies, 39.7%), followed by Japan (7 studies, 11.1%) and China (5 studies, 7.9%) (Table 2). Other countries represented included Germany (3 studies, 4.8%), Korea (4 studies, 6.3%), and Turkey (3 studies, 4.8%) with several countries contributing 1 study each (including Australia, Canada, Greece, India, Iran, Italy, Lebanon, Netherlands, Portugal, Spain, Sweden, Switzerland, Taiwan, and the United Kingdom; Fig. 2A).

Publication ...

Discussion

To the best of our knowledge, this is the first systematic review examining current advancements in the diagnosis and treatment of sLGGs, which, according to Perilongo and colleagues,⁷⁴ represent a poorly understood phenomenon. Therefore, the aim of this systematic review was to further elucidate the significance of the diagnosis and treatment of sLGGs. The total number of included studies was 63, which supports the rarity of these tumors,¹² as well as the need for specialized and focused ...

Summary

The treatment and prognosis of sLGGs remain complex. While surgery, radiotherapy, and chemotherapy have been shown to improve survival and neurologic function, significant challenges persist, particularly due to the rarity of these tumors and the limited data available. Surgical therapy, especially with regard to GTR of these tumors, leads to improved survival and can be potentially curative. The individualized treatment plans are essential, with careful consideration of the risks and benefits ...

Clinics care points

- The prognosis for sLGGs is largely influenced by tumor histology and the treatment modality employed. ...
- Malignant transformation of low-grade gliomas into high-grade gliomas is a significant concern for adults but is much less likely to occur in pediatric patients. ...
- Surgical resection remains the primary treatment of sLGGs, with GTR or STR associated with improved survival outcomes when followed by radiotherapy, which can stabilize the disease and improve neurologic outcomes; however, radiotherapy ...

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Acknowledgments

Andrew J. Gienapp, MS (Department of Neurosurgery, University of Tennessee Health Science Center, Memphis, TN, USA) provided copyediting and publication assistance. ...

Disclosure

The authors have no conflicts of interest to disclose. Funding sources: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. ...

First page preview



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