Healthcare resource use for pediatric low-grade glioma care: a cohort of linked electronic health records and claims data

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Background

• Pediatric low-grade glioma (pLGG) is the most common brain tumor in children, accounting for approximately 30% of all central nervous system tumors.
• Despite the indolent nature of low-grade lesions and high long-term survival, pLGG is associated with persistent long-term tumor- and treatment-related morbidity.1-5

Objective

• We conducted a retrospective study of linked claims and electronic health records (EHRs) to characterize the costs associated with the treatment of pLGG.

Methods

• A retrospective study was performed using the Optum® de-identified Market Clarity Dataset linked claims (commercial, Medicare Advantage and Managed Medicaid beneficiaries) and EHRs of cases ≥18 years of age, with an ICD-10 code for brain neoplasm and ≥1 physician notes between January 01, 2017 and June 30, 2018 (Figure 1).
• The index date was first claim or EHR with an ICD-10 code for brain neoplasm.
• pLGG-relevant data from physician notes was identified using natural language processing.
• The observation period included 3 months prior to index date (pre-index) and 6-month segments from index date for 36 months (post-index).
• Cases had either continuous EHR activity or continuous insurance coverage in this period.
• Results for procedures and medication use were reported as averages throughout the 36-month post-index follow-up period.

Results

• Of 2641 patients assessed for eligibility, a total of 154 patients with pLGG were identified (Figure 1).
• Median age was 11 years, 49% of patients were female, 75% were non-Hispanic white, 13% Hispanic, 5% African American, 1% Asian and 6% other/unknown.
• 56% had commercial benefits and 44% had Medicaid benefits.
• Study results are reported with ranges over a three-year follow-up period (Figures 2-6).

Conclusions

• Patients with pLGG often require long-term medical care and high levels of healthcare resources to treat their disease and its sequela.
• Most patients with pLGG who receive disease-specific treatment will relapse and face a higher burden of disease.
• Further studies using integrated data sources are warranted to help understand the burden of pLGG and inform evidence-based healthcare planning for these patients.

References


Acknowledgments

This study was supported by City of Hope Buchanan Foundation, Pediatric Cancer Fund, and C. Robert A. and Renita H. Buchanan Cancer Center Fund. City of Hope was funded with C. Robert and Renita H. Buchanan Children’s Cancer Care Endowment. The study was performed at City of Hope National Medical Center and Children’s Hospital of Orange County.

Figure 1. Study design and profile

Figure 2. Reasons for healthcare utilization

Figure 3. Coexisting conditions

Figure 4. Filled prescriptions

Figure 5. Administered medications: overall study period

Figure 6. pLGG therapy

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References


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