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Letter to the Editor

The greatest challenge for pediatric low-grade glioma

Recently, the International Pediatric Low-Grade Glioma Coalition (iPLGGc) published a series of articles describing the landscape of pediatric low-grade glioma (pLGG) and 3 major challenges in the field.[1] Nonetheless, when considering the context of care available for children with LGG across the world, additional challenges, possibly larger and more complex to resolve, must be brought to the attention of the pediatric neuro-oncology community.

Of the 400 000 children in whom cancer develops each year, approximately 90% live in low- and middle-income countries (LMICs), where health systems are unprepared to manage the burden of pediatric cancer.[2] The reality for these children is stark. Nearly 50% of children in whom cancer develops are never diagnosed, and of those who receive a diagnosis, global cure rates are estimated to be less than 40%.[1,3] Survival of children with CNS tumors is probably even more dismal. Ultimately, the principal prognostic factor for children with cancer has nothing to do with biology but the country in which they live.

Although lower survival rates for pLGG in LMICs are reported, some as low as 60%, robust data on outcomes are scarce.[4] Furthermore, the reported incidences are extremely variable, with up to a 100-fold difference between high-income countries and LMICs, suggesting an enormous rate of underdiagnosis in LMICs.[5] Due to limitations in population-based cancer registries (PBCRs), the global burden of pLGG is unknown. Fewer than 15% of pediatric patients worldwide are covered by quality PBCRs.[5] Furthermore, in many PBCRs, benign tumors and tumors without morphologic confirmation are inconsistently captured.[6] This clearly leads to under-reporting of pLGG, particularly optic pathway glioma. Without precise data, it is impossible to evaluate and modify the factors leading to divergent outcomes.

The disparities in pLGG outcomes are rooted in inequalities in access to quality care, as many of the elements needed are not always available in LMICs. For example, pediatric neurosurgical care in LMICs is limited, with disparities in the infrastructure and essential services needed to provide neurosurgical care to children with CNS tumors.[7] Furthermore, the gap between high- and low-resource settings' abilities to provide comprehensive molecular evaluation is enlarging. In the field of pLGG, the shift toward molecular-based treatments is irrelevant to the care of most children. Without comprehensive diagnostics, patients who would benefit from targeted therapy cannot be identified. Furthermore, the use of targeted agents, ever more prevalent in the treatment of pLGG, is limited due to their availability and cost. However, such agents would be extremely valuable in resource-limited settings due to the reduced hospitalization and no impact on patient immunity associated with these treatments.

Improving the outcomes of children with LGG through equitable access to the field's scientific advances is possibly the greatest challenge for the pediatric neuro-oncology community. Data to help prioritize interventions to improve access to quality care for children with LGG are limited, thus uncertainty persists. Nonetheless, as a community, we have 2 essential challenges to address: increasing the number of children who receive a timely diagnosis and improving the outcomes of those who are treated.

To expand access to quality care, a multidisciplinary, multisectoral dialog is needed at the national, regional, and global levels. Importantly, the World Health Organization (WHO) launched the Global Initiative for Childhood Cancer (GICC) in 2018, aiming to achieve at least 60% survival for pediatric patients with cancer worldwide. The GICC selected pLGG as 1 of 6 cancers to serve as a tracer to monitor the initiative's impact. The GICC opens opportunities to highlight the needs of children with pLGG at the level of governments and ministries of health, allowing essential diagnostics and therapeutic elements to be included in national cancer control plans. Understanding the burden of pLGGs is essential to quantify the disparities and prioritize interventions. Investment in programs to increase the capacity of quality cancer registries is essential for policy-makers to make decisions on resource allocation and for clinicians to optimize care.[8] Furthermore, awareness campaigns for pediatric cancer and the strengthening of referral networks would help with timely diagnosis and treatment of pLGG. In addition, among the many challenges for pediatric cancer care to overcome in LMICs is the availability and affordability of antineoplastic drugs.[9] Although chemotherapeutic agents used to treat pLGG like vincristine, carboplatin, and vinblastine are on the WHO essential medicines list, commonly used targeted therapies have not been incorporated. The addition of agents relevant for the care of pLGG, like MEK inhibitors, should be sought as this would lead to increased access of these agents. Expanded use of targeted therapy and molecularly defined risk-stratified treatment must go hand in hand with access to molecular diagnostics. Implementing centralized national or regional molecular testing center would help to increase access to these resources.[10]

Children with pLGG who live in LMICs deserve better care and cannot be left behind as the field advances. Ultimately, our

ability to cure pLGG should be limited only by our understanding of the biology of the disease, not by the availability of care.

Conflict of interest statement

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