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Epigenetics to clinicopathological features: a bibliometric analysis of H3 G34-mutant diffuse hemispheric glioma literature

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Abstract

Purpose: Pediatric-type diffuse high-grade gliomas are the leading cause of cancer-related morbidity and mortality in children. More than 30% of diffuse hemispheric gliomas (DHG) in adolescents harbor histone H3 G34 mutations and are recognized by the World Health Organization as a distinct tumor entity. By reporting bibliometric characteristics of the most cited publications on H3 G34-mutant DHG (H3 G34 DHG), we provide an overview of emerging literature and speculate where future research efforts may lead.

Methods: One hundred fourteen publications discussing H3 G34 DHG were identified, categorized as basic science (BSc), clinical (CL), or review (R), and ranked by citation number. Various bibliometric parameters were summarized, and a comparison between article types was performed.

Results: Articles within this study represent principal investigators from 15 countries and were published across 63 journals between 2012 and 2024, with 36.84% of articles originating in the United States. Overall median values were as follows: citation count, 20 (range, 0-2591), number of authors, 9 (range, 2-78), and year of publication, 2020 (range, 2012-2024). Among the top ten most cited articles, BSc articles accounted for all ten reports. Compared to CL and R articles, BSc articles were published in journals with higher impact factors.

Conclusion: We establish variability in bibliometric parameters for the most cited publications on H3 G34 DHG. Our findings demonstrate a paucity of high-impact and highly cited CL reports and acknowledge an unmet need to intersect basic mechanism with clinical data to inform novel therapeutic approaches.

Keywords: Bibliometric analysis; Diffuse hemispheric glioma; H3 G34; Pediatric high-grade glioma.