

ABSTRACT

Childs Nerv Syst. 2022 Mar 29. doi: 10.1007/s00381-022-05503-w. Online ahead of print.

The evolving landscape of pilocytic astrocytoma: a bibliometric analysis of the top-100 most cited publications.

Bauman MMJ(1), Harrison DJ(1), Giesken MB(1), Daniels DJ(2)(3).

Author information:

(1)Mayo Clinic Alix School of Medicine, Rochester, MN, USA.

(2)Department of Neurological Surgery, Rochester, MN, USA.

daniels.david@mayo.edu.

(3)Department of Neurological Surgery, Mayo Clinic, 200 1st St. SW, Rochester, MN, 55905, USA. daniels.david@mayo.edu.

BACKGROUND: Pilocytic astrocytomas are the most common low-grade glioma of the central nervous system that typically occurs in children, and much research has been dedicated to characterizing their molecular features and clinical courses. We provide an overview of the current literature through the use of a bibliometric analysis of the top 100 most cited publications discussing pilocytic astrocytomas.

METHODS: We identified the top 100 most cited publications discussing pilocytic astrocytomas. Articles were ranked based on the number of citations. Descriptive statistics and univariate analysis were used to determine any trends or significant differences in the data.

RESULTS: Of the top 100 articles, 50 were basic science (50%), 34 were clinical (34%), and 16 were review (16%). The number of citations ranged from 79 to 921, with 123 being the median. The US had the most first authors and principal authors ($n = 53$ and $n = 54$, respectively). Years of publication had a left-skewed distribution and peaked during 2011 with 12 articles published in that year. Sixty percent of basic science articles investigated BRAF/MAPK pathways, while 67.6% of clinical articles focused on evaluating treatment options for pilocytic astrocytomas. Compared to basic science and clinical articles, review articles were published more recently ($p < 0.001$), had fewer authors ($p = 0.025$) and were published in journals with higher impact factors ($p = 0.022$).

CONCLUSION: Research regarding pilocytic astrocytomas has increased over the past three decades. Future directions of research point towards employing targeted therapies and discovering additional cellular pathways contributing to disease pathogenesis.

© 2022. The Author(s), under exclusive licence to Springer-Verlag GmbH Germany, part of Springer Nature.

DOI: 10.1007/s00381-022-05503-w

PMID: 35352179