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## Abstract

### Medulloblastoma incidence has not changed over time: A CBTRUS study

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**Background:** Past studies of medulloblastoma (MB) present conflicting claims about declines and rises in MB incidence, possibly due to misclassification. By using a strict classification of the disease and a rigorous analysis of a data registry, we aimed to determine the incidence trends of MB over the last three decades. **Methods:** 441 MB patients diagnosed between 1985 and 2002 were identified from the Central Brain Tumor Registry of the United States (CBTRUS), a data set representing approximately 5% of the American population (6 registries). MB was strictly defined and non-cerebellar embryonal tumors (primitive neuro-ectodermal tumors [PNETs]) excluded, using histology and site codes. Multiplicative Poisson regression and joinpoint regression were performed (Joinpoint Regression Program, version 3.0, Statistical Research and Applications Branch, National Cancer Institute) to determine the estimated average annual percentage change (EAPC) and sharp (i.e., acute) changes in incidence, respectively. **Results:** A slight but nonsignificant ( $p=.18$ ) increase in medulloblastoma was demonstrated (EAPC = 1.1), and no sharp changes in incidence were found (joinpoints = 0). The analysis was repeated with a less strict definition of MB (including non-cerebellar PNETs) and 559 patients were identified. Using this broader classification scheme, there was a statistically significant increase in incidence ( $p=.02$ , EAPC = 1.6), but no sharp changes in incidence (joinpoints = 0). **Conclusions:** MB incidence does not appear to have changed since the 1980s. "Medulloblastoma" incidence increased only when the diagnosis was not strictly defined and misclassified by including non-cerebellar PNETs in the analysis. The observed increase in the combined MB/PNET classification may relate to the PNET hypothesis—a proposal that all brain tumors of apparently undifferentiated neuroepithelial cells be considered a unique diagnostic group—popularized in the 1980s and early 1990s.

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