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Risk of primary childhood brain tumors related to season of birth in Kumamoto Prefecture, Japan.

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Abstract

OBJECTIVE: Environmental factors present around the time of birth may induce the development of childhood cancer. Some studies suggested an excess of brain tumors in children born during the winter months. The aim of this study was to look for evidence of the seasonality of birth in children who were younger than 15 years at the time of brain tumor diagnosis in the Kumamoto Prefecture, Japan. **METHODS:** We surveyed 115 patients younger than 15 years who were diagnosed with primary intracranial tumors. All patients were born between 1989 and 2003. **RESULTS:** We found a statistically significant difference between the season of their birth and the expected distribution of birth dates in the Kumamoto Prefecture ($p = 0.028$). Among the different diagnostic groups there was a statistically significant winter peak in the birth of patients with germ cell tumor ($p = 0.001$). No statistically significant seasonal patterns were detected in the birth season of patients with astrocytoma, malignant glioma, and medulloblastoma. **CONCLUSIONS:** Although our data provide modest support for a winter peak in the birth of children with brain tumors, we posit that there may be yet unknown, complex biological mechanisms that account for these putative seasonal patterns.

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