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Birth Size Characteristics and Risk of Brain Tumors in Early Adulthood: Results from a Swedish Cohort Study.

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Abstract

BACKGROUND: Despite extensive research on the effect of birth size characteristics on childhood brain tumors, very few studies have evaluated the effect of birth size characteristics on the risk of adult brain tumor, and they have provided inconsistent results.

METHODS: All individuals born in Sweden between 1973 and 1995 who were still alive and cancer free at their 15th birthday were included in the study (n = 2,032,727). At the end of the study period (December 31, 2010), the study participants were 15 to 37 years old. Incident cases of primary brain tumors were identified through the Swedish Cancer Register.

RESULTS: No association was observed between any birth size characteristics and glioma, although an indication of increased glioma risk associated with high birth weight, or being large for gestational age at birth, was found among men [relative risk (RR) = 1.36, 95% confidence interval (CI), 0.97-1.90; RR = 1.44, 95% CI, 0.99-2.09, respectively]. An increased risk of meningioma was observed among individuals born with a large head circumference (RR = 1.76, 95% CI, 1.01-3.05). Large head circumference was also associated with an elevated risk of neuroma (RR = 1.86, 95% CI, 0.94-3.68). Being born small for gestational age was also related to a higher risk of neuroma (RR = 2.50, 95% CI, 1.31-4.78).

CONCLUSION: Selected birth size characteristics were associated with increased risk of some brain tumor subtypes in young adults.

IMPACT: We have presented additional evidence suggesting that birth size characteristics are associated with subsequent primary brain tumor risk in young adults. Cancer Epidemiol Biomarkers Prev; 25(4); 678-85. ©2016 AACR.

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