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BACKGROUND: "Conditional survival probability" is defined as the probability that a patient will survive an additional time, given that the patient has already survived a defined period of time after diagnosis. Such estimates might be more relevant for clinicians and patients during post-diagnosis care, because survival probability projections are based on the patient's survival to date. Here, we provide the first population-based estimates of conditional survival probabilities by histology for brain cancer in Canada.

METHODS: Canadian Cancer Registry data were accessed for patients diagnosed with primary brain cancers during 2000-2008. Kaplan-Meier survival probabilities were estimated by histology. Conditional survival probabilities at 6 months (short-term, denoted scs) and 2 years (long-term, denoted lcs) were derived from the Kaplan-Meier survival estimates for a range of time periods.

RESULTS: Among the 20,875 patients who met the study criteria, scs increased by a margin of 16-18 percentage points from 6-month survivors to 2-year survivors for the three most aggressive brain cancers. The lcs for 2-year survivors was 66% or greater for all tumour groups except glioblastoma. The lcs for 4-year survivors was 62% or greater for all histologies. For glioblastoma and diffuse astrocytoma, the lcs increased each year after diagnosis. For all other histologies, the lcs first increased and then plateaued from 2 years after diagnosis. The lcs and scs both worsened with increasing older age at diagnosis.

SUMMARY: We report histologically specific conditional survival probabilities that can have value for clinicians practicing in Canada as they plan the course of follow-up for individual patients with brain cancer.

KEYWORDS: Conditional survival; brain cancer; brain neoplasms; brain tumours; survival

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