BACKGROUND: We evaluated the National Cancer Data Base (NCDB) to describe current hospital-based epidemiologic survival patterns of brain and central nervous system (CNS) tumors.

METHODS: NCDB data were analyzed for patients diagnosed with brain and CNS tumors defined according to the World Health Organization Classification of Tumours of the Central Nervous System. The classification scheme includes histologic grading that provides a means to predict prognosis having importance to survival. Diagnosis years 2004-2006 were selected for this study to coincide with implementation of The Benign Brain Tumor Cancer Regimens Amendment Act. Survival estimates were generated using the Kaplan-Meier method with a follow-up cutoff date of December 2011. The survival analyses included detailed tumor classifications, tumor WHO grade groups; demographic characteristics; and primary site evaluation were all analyzed. Parallel analyses were conducted using the SEER registries research database.

RESULTS: The NCDB included substantially greater representation of WHO grade I, grade II, and especially IV tumors, whereas the SEER dataset included considerably more WHO grade I tumors than NCDB reflecting differences in hospital vs. population-based registries. (Figure 1)

Table 1 presents 5-year survival rates for detailed WHO grade I-IV tumors. NCDB and SEER survival estimates were observed to be consistent with SEER registries.

Figure 2. NCBDB Overall Survival by WHO Grade, 2004-2006 Cases

- An inverse relationship was seen between WHO grade and survival. The most favorable survival was observed for WHO grade I tumors with diminishing survival time as WHO grade increased (Figure 2, Table 3).

- Histology, gender, race, age, and primary site of tumor influence survival outcomes.

COMMENT: Our findings are among the first to report survival outcomes for benign and borderline malignancy in addition to malignant brain and CNS tumors after implementation of Public Law 107-20.

REFERENCES


Survival rates are suppressed for histologies with less than 1 case in 500,000 person-years.

- 10-year survival rates are suppressed for histologies with more than 1 case in 100,000 person-years.

- 5-year survival rates are suppressed for histologies with less than 1 case in 10,000 person-years.

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