Central nervous system tumor epidemiology

Approximately 89,000 new primary brain tumors are diagnosed in the United States each year, for which 27% are gliomas and 32.8% are malignant gliomas [1].

Tumours of central nervous system constitute 1%-2% of tumours in adults. The incidence of brain tumours has been reported to be around 3.9 and 3.0/one lac/year in males and females respectively.

Glioma and meningioma are the two most common primary central nervous system tumors, representing 70% and 20% of brain tumors, respectively [2] [3].

A total of 16 116 institutional records of CNS tumors were analyzed. The frequency and distribution of CNS tumors were evaluated by tumor type, patient age and patient gender. The annual relationship between CNS tumors and surgical discharges (SD) over the last 20 years was estimated.

The frequencies of most CNS tumors were consistent with those found worldwide, and the most common tumors were neuroepithelial tumors (33%), particularly astrocytic tumors (67%); meningeal tumors (26%); and pituitary tumors (20%). The incidence of pituitary tumors in these data was twice as high as that reported in other regions of the world, and the relationship between CNS tumors and SD was consistent over time (0.22-0.39).

This study summarizes the largest sample of CNS tumor cases analyzed in Mexico and provides an important reference of the frequency of this tumor type in the country. This work will serve as a basis for conducting studies evaluating factors associated with the presence of CNS tumors and for identifying adequate public health interventions [4].

Central Brain Tumor Registry of the United States

see Central Brain Tumor Registry of the United States.

China

In a cross-sectional study, we analyzed people of all ages with CNS cancer in China from January 1, 1990, to December 31, 2019. We collected the data including incidence, deaths, and disability-adjusted life-years (DALYs) from the Global Burden of Disease (GBD) study 2019. The age-standardized incidence rate (ASIR), age-standardized death rate (ASDR), and DALYs rate were compared by age and sex.

Results: In 2019, there were more than 94 (95% uncertainty intervals [CI]: 73-114) thousand incident cases, 63 (47-76) thousand deaths and 2.0 (1.5-2.5) million DALYs due to CNS cancer in China in 2019. From 1990 to 2019, the absolute number of incident cases, deaths, and DALYs increased by 107.0% (39.0 to 169.0), 67.0% (12.0 to 117.0), and 16.0% (-23.0 to 63.0). The ASIR increased by 28.0% (-16.0 to 64.0). ASDR and age-standardized DALYs rate decreased by -10.0% (-40.0 to 15.0) and -22.0% (-50.0 to 10.0), respectively.

The overall burden due to CNS cancer in China remains high, as evidenced by the sharp increase in

the incident cases, deaths, and DALYs from 1990 to 2019. Elderly patients and neonates show relatively high burden. Sex-specific differences in the incidence of CNS cancer in China are observed [5].

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