ABSTRACT

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Disease Burden, Risk Factors, and Trends of Primary Central Nervous System (CNS) Cancer: a global study of registries data.

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BACKGROUND: This study aimed to evaluate the global incidence, mortality, associated risk factors, and temporal trends of central nervous system (CNS) cancer by sex, age, and country.

METHODS: We extracted incidence and mortality of CNS cancer from the GLOBOCAN (2020), Cancer Incidence in Five Continents series I-X, WHO mortality database, the Nordic Cancer Registries, and the Surveillance, Epidemiology, and End Results Program. We searched the Global Health data exchanges for the prevalence of its associated risk factors. We tested the trends by Average Annual Percentage Change (AAPC) from Joinpoint regression analysis with 95% confidence intervals in different age groups.

RESULTS: The age-standardized rates (ASRs) of CNS cancer incidence and mortality were 3.5 and 2.8 per 100,000 globally. Southern Europe (ASR=6.0) and Western Asia (ASR=4.2) had the highest incidence and mortality, respectively. The incidence was associated with Human Development Index, Gross Domestics Products per capita, prevalence of traumatic brain injuries, occupational carcinogens exposure, and mobile phone use at the country level. There was an overall stable and mixed trend in the CNS cancer burden. However, increasing incidence was observed in younger male population from five countries, with Slovakia (AAPC=5.40; 95% CI=1.88, 9.04; p=0.007) reporting the largest increase.

CONCLUSIONS: While the overall global trends of cancer have been largely stable, significant increasing trends were found in the younger male population. The presence of some higher-HDI countries with increasing mortality suggested an ample scope for further research and exploration of the reasons behind these epidemiological trends.

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