Central Nervous System Cavernous Malformation: Descriptive Epidemiology from the Central Brain Tumor Registry of the United States

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Samantha Colby, Alex Witek, Ghaith Habboub, Min Lang, Jaes Jones, Paramita Das, Shahed Tish, Josephine Volovetz, Quinn T. Ostrom, Carol Kruchko, Jill S. Barnholtz-Sloan, Varun Kshettry, Pablo F. Recinos
Disclosures

Nothing to disclose.
Introduction

Prior epidemiologic studies on central nervous system (CNS) cavernous malformations have drawn conclusions from limited patient populations, making it challenging to evaluate factors that influence the incidence of CNS cavernous malformations nationwide. Aiming to provide a comprehensive epidemiologic analysis of CNS cavernous malformations, this study draws from the Central Brain Tumor Registry of the United States (CBTRUS), which contains population-based incidence data covering 99% of the United States population from 1994-2014.
Methods

CBTRUS was queried for CNS cavernous malformations based on ICD-O-3 codes.

Age-adjusted incidence per 100,000 persons was calculated and stratified by race, sex, age, lesion location, and diagnostic method.

Joinpoint Regression Program was used to calculate annual percentage change in incidence rates over time.
Results

5392 CNS cavernous malformations were diagnosed in the United States from 2004-2014, averaging ~490 cases annually.

The most common location was the frontal lobe (1197 cases).

Overall age-adjusted rate was 0.1569 per 100,000 (95% CI, 0.1527-0.1612).
Results

Annual rates increased from 0.0741 per 100,000 (95% CI, 0.0646-0.0847) in 2000 to 0.2204 per 100,000 (95% CI, 0.2042-0.2376) in 2012, then decreased to 0.2029 per 100,000 (95% CI, 0.1875-0.2192) in 2014.

A peak rate of 0.2275 per 100,000 (95% CI, 0.2087-0.2476) occurred in patients aged 65-74 years.
Results

The rate in males (0.145 per 100,000; 95% CI, 0.1392-0.1509) was significantly lower (P<0.05) than in females (0.1689 per 100,000; 95% CI, 0.1628-0.1751).

The rate in Hispanic patients (0.1799 per 100,000; 95% CI, 0.1666-0.194) was significantly higher (P<0.05) than in non-Hispanic patients (0.1563 per 100,000; 95% CI, 0.1517-0.161).
Discussion

The incidence of CNS cavernous malformation was higher in females relative to males, and in Hispanic patients relative to non-Hispanic patients. Incidence peaked in patients aged 65-74 years.

This study represents the most comprehensive epidemiological analysis of CNS cavernous malformation incidence rate in the United States to date.