

EPIDEMIOLOGICAL OVERVIEW OF MICROSURGERIES FOR INTRACRANIAL TUMORS IN BRAZIL FROM 2013 TO 2022

Luan Victor Silva Ribeiro¹, Giovanna Lopes Passos¹, Rebeca Borges Negreiros¹, Licinio Levino Vieira Neto¹, Natália Christian Trindade Pinheiro¹, Wesley Patrick Santos Bonfim¹, Lilianne Rodrigues Fernandes², Brenda Michelly da Silva Carvalho³

¹ Afya Faculdade de Ciências Médicas, Brazil

² Universidade do Estado do Pará, Brazil

³ Centro Universitário Metropolitano da Amazônia, Brazil

Introduction: Microsurgery for intracranial tumors aims primarily to allow histopathological diagnosis and surgical treatment of neoplasms located in sensitive neurological areas, using a surgical microscope to ensure adequate illumination and magnification. This approach enables precise excision of tumor lesions while preserving or restoring the patient's neurological function. **Objectives:** To analyze the epidemiological profile of hospitalizations resulting from microsurgeries for the treatment of intracranial tumors in Brazil between 2013 and 2022. **Methods:** This is a retrospective, descriptive, and analytical study with a quantitative approach, based on data from DATASUS (SIH/SUS and Hospital Production databases). Hospitalizations for microsurgery of intracranial tumors (code 0403030145) performed from January 2013 to December 2022 were included. The analyzed variables were: annual number of hospitalizations by region, average length of hospital stay (in days), and total cost of procedures (in BRL). Statistical analysis was performed using Microsoft Excel® 365 and R® (v4.2.2) with raw data. Absolute and relative frequencies, means, and temporal variations were calculated. The hospitalization rate per 100,000 inhabitants was estimated based on IBGE population data. **Results:** Between 2013 and 2022, 21,336 hospitalizations for intracranial tumor microsurgeries were recorded in Brazil. The annual number of procedures ranged from 1,610 (2020) to 2,345 (2015), with a sharp drop in 2020 (-24.1%) and recovery in 2021 (+28.6%). The national average hospitalization rate was 1.01 per 100,000 inhabitants. Regional distribution was: Southeast (8,751 – 41.03%), Northeast (5,785 – 27.11%), South (3,042 – 14.26%), North (2,010 – 9.42%), and Central-West (1,748 – 8.19%). The highest average hospital stay was in the North (17.9 days) and the lowest in the Southeast (13.8 days), with a national peak in 2013 (16.3 days). The total cost of procedures was BRL 122,379,265.02, with the Southeast accounting for 42.60%, followed by the Northeast (25.38%), South (17.73%), North (8.47%), and Central-West (5.80%). **Conclusion:** The findings reveal significant variations in procedure frequency over the years and among regions. The Southeast and Northeast led in procedure volume and financial investment. The Southeast had the shortest average hospital stay, suggesting more efficient hospital management, while the North had the longest, indicating potential challenges in infrastructure and logistics. These results highlight disparities in resource

allocation and access to neurosurgical care in Brazil, reinforcing the need for public policies that promote greater regional equity.

Keywords: Microsurgeries; Intracranial tumors; Hospitalizations; Region.