

Eight years of Brain Tumors: epidemiology, characteristics and survival rate of an Italian Neurological Ward population.

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Aim: primary brain tumors are a group of neoplasms arising from different cells of the central nervous system (CNS). Although uncommon, there is evidence that the incidence of these tumors has been rising for as much as fifty years. A careful description of the incidence rates of the different histological subtypes of CNS tumors is not easily updated and available.

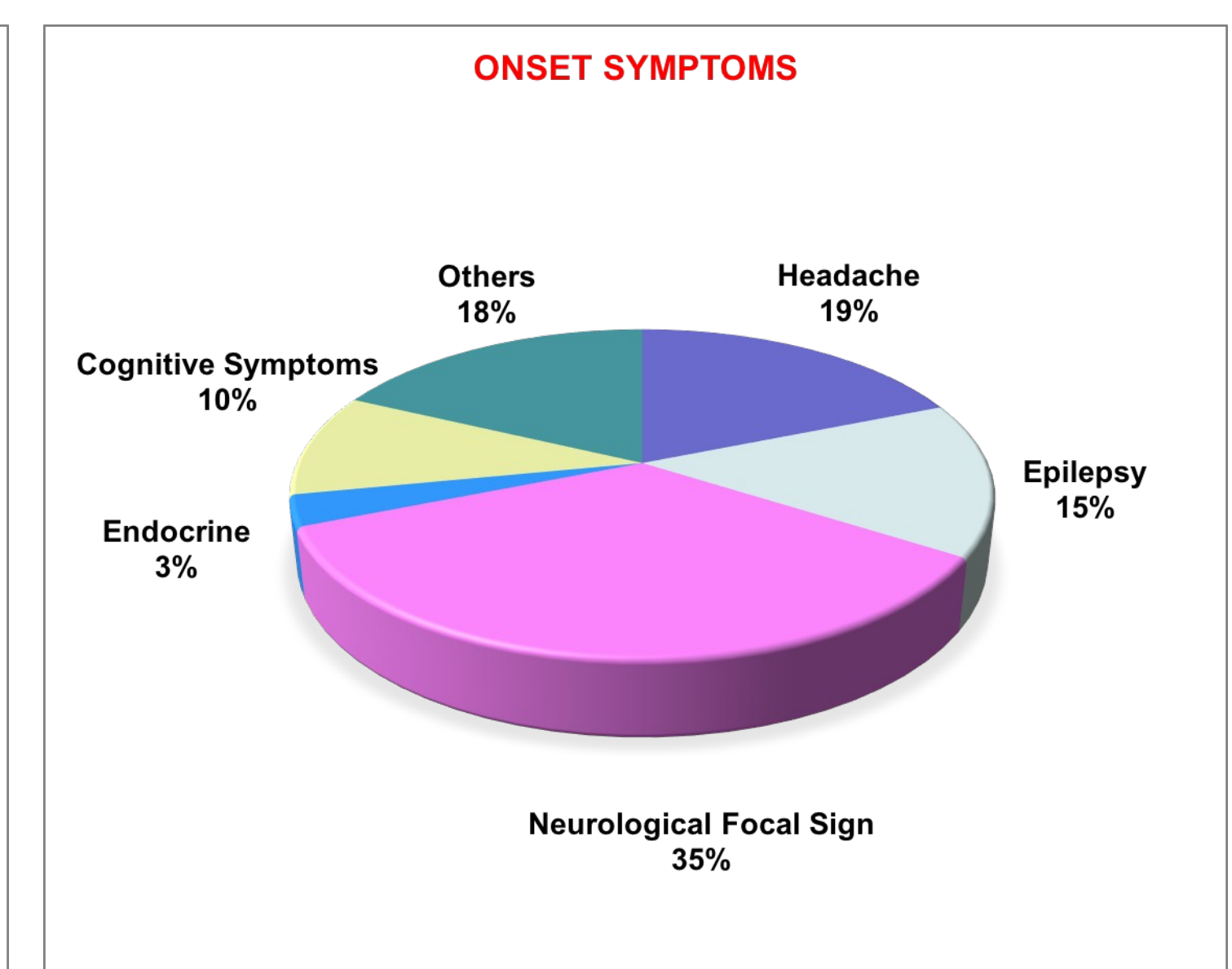
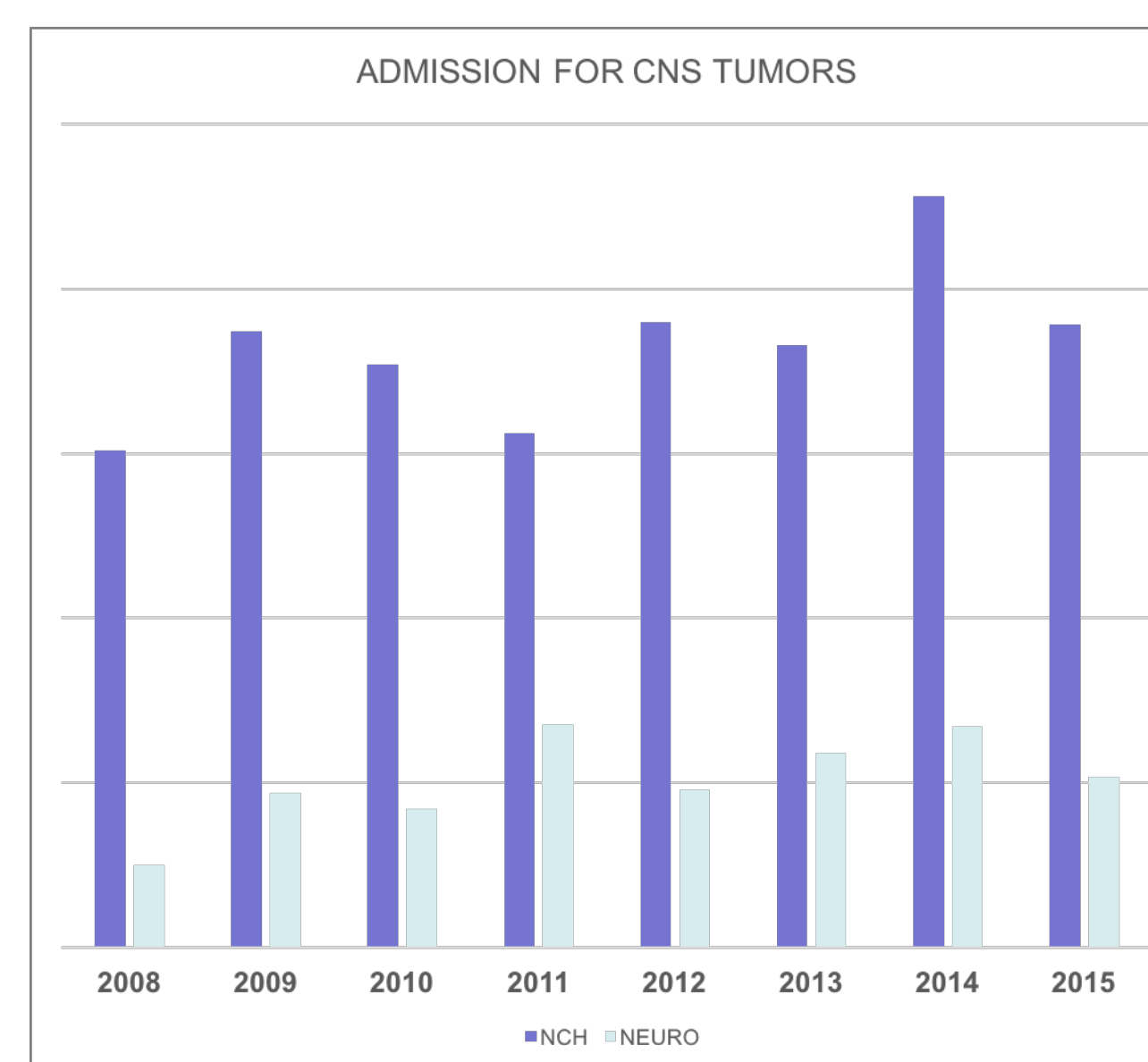
Table 1. Characteristics of the sample of patients (n = 1941) with CNS tumors admitted at the Neurological and Neurosurgical ward of Spedali Civili – Brescia from 2008 to 2016.

	Values
Female (%)	957 (49.7)
Age, years	59.3 (15.4)
Age at symptoms onset	58.7 (15.5)
Karnofsky Performance Status, admission	78.1 (15.9)
Karnofsky Performance Status, discharge	80.1 (38.3)
Average survival rate	19.0 (6.3)

Values are expressed as means (SD) or n (%)

Material: We considered the oncological diagnosis at discharge of patients hospitalized at the Neurology and Neurosurgery ward of the Spedali Civili di Brescia in the last 8 years.

Methods: CNS cancer diagnoses were classified according to the histological results. We calculated, the average age of onset, the brain cancer location and the survival rate. Patients with a uncertain diagnosis or in the absence of histological data were excluded from analysis.



Results: 3.6% of admissions in the last eight years were discharged with a diagnosis of CNS tumors. the mean age was 59.3 (SD 15.4). There were no significant gender differences in the selected sample (49.7 % were female). The age at onset is 58.7 years (SD 15.5). with an average survival rate (not divided by diagnosis) 19 months (SD + 6.3). Patients at the beginning of hospitalization showed a severity index (calculated using the Karnofsky Index) of 78.1 (SD 15.9) and at discharge was 80.1(SD 38.3). The most frequent diagnosis was meningioma (431 patients; 22.2%). Tumors of glial series were present in 21.3% of patients (112 patients) of which 15.6% high-grade malignancy; 20.5% of patients received a diagnosis of brain metastases (398 patients). The location was multicentric in 11.4% of patients (222 subjects), subtentorial in 33.1% (642 subjects); Supratentorial in 54.8% (1063 subjects).

Table 2. Principal diagnoses in patients (n = 1941) with CNS tumors admitted at the Neurological and Neurosurgical ward of Spedali Civili – Brescia from 2008 to 2016.

	Values
Glial Series Lesion (%)	414 (21.3)
Metastases	398 (20.5)
Meningioma	431 (22.2)
Pituitary Adenoma	171 (8.8)
Lymphoma	26 (1.3)

Table 3. Location of CNS tumors in patients admitted at the Neurological and Neurosurgical ward of Spedali Civili – Brescia from 2008 to 2016.

	Values
Subtentorial	642 (33.1)
Supratentorial	1063 (54.8)
Diffuse	222 (11.4)

Discussion: CNS tumors are not so rare condition in neurological ward and age of onset can affect the younger age groups. The histological diagnosis appears to be the essential data in guiding the therapeutic decision of the neuroncologist.

Conclusion: a precise definition of the diagnosis, histological type, and extent of the lesion appears essential in the practice of neuro-oncologist, in light of the new WHO classification.

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