

COMMENTARY

Epidemiologic Patterns of Primary Brain Tumors in Iran

S Maysam Alimohamadi*, S Mohamad Ghodsi, S Ebrahim Ketabchi

Abstract

There appear to be some differences between the patterns of brain tumor epidemiology in Iran and western countries. Thus, the prevalence of glioma was earlier estimated to be about 45% of all brain tumors, somewhat low in comparison to the western reports at that time, but almost the same as in Southeast Asian countries. A similar low figure was also obtained more recently indicating that the earlier estimate was not simply due to the lack of medical facilities resulting in under-reporting of this particularly malignant form of cancer. There may also be differences regarding incidences of central nervous system (CNS) tumors in females between Iran and Western countries. Clearly this is an area which deserves epidemiological research.

Key Words: Primary brain tumours - Iran - country comparisons

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Introduction

There are a few well documented reports about the epidemiologic features of brain tumors in Iran. Regarding those few that are available from referral neurosurgical centers of Iran's capital, there seem to be some differences between the patterns of brain tumor epidemiology in Iran and western countries (Table 1).

Inter-country Variation?

In the first report from Iran by Ameli et al (1979), the prevalence of glioma was estimated to be about 45% of all brain tumors, somewhat low in comparison to the western reports at that time, but almost the same as in Southeast Asian countries (Barker et al., 1976; Glasauer, 1976). Ameli et al, assigned this discrepancy to the higher mortality rates from the more aggressive types of brain tumors due to the shortage of medical facilities in Iran, leading to lower recording of these types by health care centers. If this was the case, the recent reports from Iran should have documented a higher rate of gliomas, while they in fact revealed a continued low prevalence of gliomas

among intracranial neoplasms.

In fact, in Iranian reports of glial tumor subtypes, the majority of lesions are low grade astrocytomas and ependymomas (Ameli et al., 1979; Mehrazin et al., 2006) which is very much opposite to the absolute predominance of high grade gliomas in reports coming from western countries, such as the US and France (Surawicz et al., 1999; Bauchet et al., 2007).

Furthermore, according to some western reports, the overall prevalence of central nervous system (CNS) tumors is increasing in the female sex (Surawicz et al., 1999; Bauchet et al., 2007) but such a trend has not been not evident among Iranian reports (Ketabchi and Ghodsi, 1990; Mehrazin et al., 2006). Whether this difference is a true epidemiologic finding, or whether it could be due to the lower level of health care services available for women in developing countries, leading to the lower records of tumors, is an area worthy of further exploration.

These and many other uncovered features, clarify the need for prospective epidemiological studies of brain tumors in Iran, especially with the focus on the presence of diverse racial and ethnic subpopulations in this large country of the Middle East.

Table 1. Results of Iranian and Western Reports for Percentages of Brain Tumour Types

Reference	Study period	Number of cases	Source of data	M/F	Glioma	Meningioma	Adenoma
USA (CBTRUS ¹)	1990-1994	20,765	National pathology based case registry	48/52	47.2	24.0	8.0
France (FBTDB ²)	2000-2001	10,000	National pathology based case registry	46/54	49.5	30.9	6.0
Ameli et al	1979	1,500	Pathology records of 3 Referral centers	NR*	45.0	29.0	6.0
Ketabchi et al	1979-1987	2,469	Pathology records of 3 referral centers	51/49	35.2	23.9	10.0
Mehrazin et al	1978-2003	3,437	Pathology records of one referral center	55/45	33.3	26.0	14.2

* NR: Not Reported, ¹Central Brain Tumor Registry of US, ²French Brain Tumor Data Bank

Dept of Neurosurgery, Sina Hospital, Tehran University of Medical Sciences, Iran *For Correspondence: alimohamadi86@razi.tums.ac.ir

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