

Study of Incidence of Brain & other CNS Tumor in Bangladesh: A Concept Paper

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Abstract:

Management strategies and prognosis of different brain tumors depend on a combination of factors like the age, sex, type and grade of tumor, its location, and size. A number of studies from Western countries have reported on the pattern, incidence and mortality of brain and central nervous system (CNS) tumors. Incidence of CNS tumors including primary & secondary brain tumors has not been studied in Bangladesh yet. For study and management of each brain tumor it is an essential part to have information about the incidences of those. Most information that we find in our text books, are from the western world. Those are not always practically relevant in our context. No demographic study of brain and CNS tumors has been conducted in our country so far, we feel that it is very essential to have such a study in our country as the modern medical science revolves around evidence based research. In our opinion, this study will be a landmark study of neurosurgery and will be beneficial for all the neurosurgeons as well as for the neurosurgical patients of Bangladesh. With this intention, we are presenting our thoughts and proposals for the study, which will need cooperation from all the neurosurgeons of Bangladesh as well as specialists from some other allied disciplines. If this study goes successfully, we will be able to have a database on brain and CNS tumors in Bangladesh.

Key words : Brain tumor, Incidence

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Introduction :

- With the increased availability of diagnostic & imaging facilities at district levels in Bangladesh, the diagnosis of brain & other CNS tumors is higher in comparison to earlier times.

- Some recent studies from South Asian countries show that the brain and central nervous system (CNS) tumors are the 8th commonest cancer among males and 10th among females.
- Management strategies and prognosis of tumor depends on the combination of factors like the type and grade of tumor, its location, size and state of development.
- A number of studies from Western countries have reported on the pattern, incidence and mortality of brain and central nervous system (CNS) tumors.
- But no population based data have been reported on the incidence of brain and CNS tumors from Bangladesh.
- So the proposed study will be an important initiative to identify the incidence of brain and CNS tumors in Bangladesh.

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Rationale :

- Incidence of CNS tumors including primary & secondary brain tumors has not been studied yet in Bangladesh.
- For study of each brain tumor, it is essential to have information about the incidences of those.
- The epidemiological data that we base upon during our current practice is based on data from western

countries which may not be practically relevant in our perspective.

- Recently few studies have been carried out in our neighboring countries to find out the incidences of brain tumors.
- But no epidemiological study of brain tumor has been conducted in our country so far.
- In this era of evidence based medicine, we feel that it is very essential to have such a study, and which will be beneficial for all the neurosurgeons and above all for the neurosurgical patients.

General Objectives :

The overall objective of the study is to investigate the incidence of brain tumor among the population of Bangladesh.

Specific Objective :

- to explore the incidences of CNS tumors among the population of Bangladesh
- to estimate the incidences of CNS tumors by age and gender
- to study the socio-demographic characteristics of CNS tumor patients

Methods and Materials :

- Study Design:
cross-sectional study
- Study period:
one year
- Study population:
All the Brain & other CNS tumor patient in Bangladesh
They will be selected purposively for the study irrespective of their age, religion and socioeconomic status
- Sample:
Patient registered/admitted to any health facilities with brain & other CNS tumors during the study period.
- Sampling & Selection:
Study will follow a purposive sampling procedure
All tertiary and specialized hospitals (including all medical college hospitals, private hospitals and

clinics) providing services on Neurosurgery, Neurology & oncology will be selected for the study.

All patients who will seek treatment for tumors from indoor/out-door of any selected health facilities during the study period will be specific sample for this study

- Exclusion criteria of patient:

Other than Brain & Spinal tumors (primary/secondary) any intracranial and intraspinal SOLs like Vascular or infective lesions will be excluded from the study.

- Research Instrument:

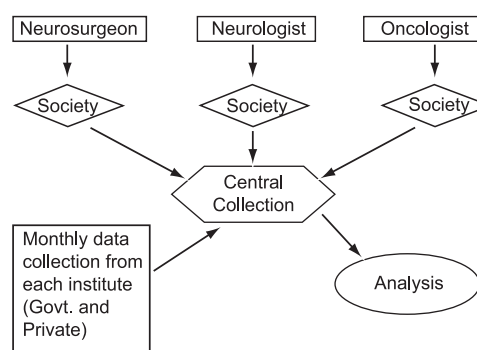
A pre-tested questionnaire consisting of open and close ended questions will be used for data collection.

- Communication with other societies:

- Training for:

Neurosurgeons, Neurologists and oncologists who will collect data from the patients, team leader & other supporting staff will be trained up to collect and manage data properly.

Procedure of data collection



- Detection of brain and CNS tumor:
 - Patient's brain CT scan, MRI reports & histopathology (where applicable) will be reviewed and analyzed.
- Avoidance of duplication of data:
- Procedure of data analysis:
 - All the collected information will be enter in a PC with EPI info software. Finally, data will be analyzed

by SPSS software. Descriptive statistics (univariate analysis) such as mean percentage will be generated. For assessing the association between variables bi-variate analysis (cross-tabulation) will be done. The chi-square statistic will be used to test the significance of the association between variables. If applicable, t-test and ANOVA will be used to find the significance difference between groups for analyzing the quantitative variables.

- Ethical issues:
- All ethical issues will comply with Helsinki Declaration for Medical Research Involving Human Subjects 1964

Conclusion :

- In a nation with a history of neurosurgery spanning over 4 decades, no national data exists in neurosurgery
- Despite the diverse and complicated surgeries being carried out by our competent neurosurgeons countrywide, we still lag behind the western world in organized neurosurgical patient database
- With this in mind, we want to convey the message regarding building this database, which might become a milestone in the history of neurosurgery of our country and will make us compatible with ever developing neurosurgical arena.