

Original Article

Outcome of Clinically Suspected Encephalitis Patients Admitted To Faridpur Medical College Hospital, Bangladesh

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Abstract:

Significant number of Encephalitis patient was admitted in Faridpur Medical College Hospital (FMCH) in last years. There was an outbreak of Nipah Virus encephalitis in Faridpur in 2004. Among the 34 cases 26 patients were expired. After that, occurrence of disease is continuing. In this study a total number of 100 cases of clinically suspected encephalitis patients were studied for different clinical parameters and observed their clinical outcome. This is a retrospective study using data from hospital records. Among them 62% were male and 38% were female. Largest numbers of patients were under age group of 21-35 years, 46% of patients were from Faridpur district then 24% from Rajbari. Majority of patients were presented with neurological features (74%), 10% with pulmonary, 4% gastrointestinal, rest 12 % with combined neurological and pulmonary features. Maximum numbers (30%) of patients were attained treatment within 25 to 48 hours of onset of symptoms. Among them 78% of the patients recovered, 17% expired and 5% were referred. In this context, further prospective study is required to find out the epidemiological characteristics of Encephalitis in Faridpur region.

Key words: Encephalitis, Nipah virus.

Introduction:

Acute inflammation of brain parenchyma is encephalitis, that often accompanied by inflammation of the adjacent meninges. The degree and type of damage due to encephalitis vary from mild to severe and from focal to multifocal and diffuse neuro-psychological dysfunction. Both infectious and noninfectious causes are responsible for encephalitis. But most often the causative agents are viruses.

A range of viruses can cause encephalitis but only a minority of patients have a history of recent viral infection¹. Primary viral encephalitis may be sporadic e.g. encephalitis due to herpes simplex, varicella zoster or mumps, or may be epidemic e.g. Japanese encephalitis, Nipah/Hendra virus encephalitis, dengue viral encephalitis. Secondary encephalitis may occur as a complication of measles, chicken pox, rubella or other viral infection. Japanese viral encephalitis and Nipah viral encephalitis are among the re-emerging diseases in Asian subcontinents including Bangladesh. Nipah virus encephalitis outbreak occurred in Bangladesh in May 2001, January-February 2003, January-February 2004 and March-April 2004². Japanese encephalitis virus was detected in 11% and 28% patients in Rajshahi and Mymensing Medical College respectively^{2,3}.

Exposure to infectious agents may be caused by insect bite, animal bite, food or drinks or skin contact. Contact with infected pigs and cows were suspected in Naogaon and Meherpur outbreak respectively⁴⁻⁷. Human to human transmission is suspected from circumstantial evidences from several outbreaks in Bangladesh. Clinical features of encephalitis are nonspecific in most cases. Short histories of fever, headache, seizure, vomiting, dizziness, impaired consciousness are the

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main presenting features. Some patients present with cough, breathlessness, hemoptysis, epistaxis or diarrhoea. Neck-rigidity or focal neurological signs are usually absent.

Routine laboratory investigations are supportive and help to exclude others differentials but not diagnostic. Laboratory confirmation needs ELISA, Serology, PCR, immunohistochemistry but our medical college hospital laboratories have no such arrangement. CSF study and CT scan may help excluding other conditions. As our current knowledge regarding aetiological agents, source and mode of transmission is not clear, further clinicopathological studies are urgently required. This study was done to see the epidemiological parameter as well as outcome of clinically suspected encephalitis patients admitted at FMCH.

Materials and Methods:

This is a retrospective study using secondary data from hospital records including admission and discharge register, and case history files. Suspected encephalitis patients, later found to be meningitis or stroke on CSF study or CT scan were excluded from the study. Among the admitted cases, 100 cases were randomly selected during the period January to December, 2015. Cases were studied for various epidemiological, clinical parameters and ultimate outcome available in case records.

Results:

The results of the study are shown in the following tables:

Among 100 cases 62% were male and 38% female, 40% were in the age group of <20 years and larger portion were male (28%) but largest (14%) numbers female were in the age group of 21-35 years (Table I).

Table I: Age and Sex distribution:

Age (Years)	Male (%)	Female (%)	Total (%)
<20	28 (28)	12 (12)	40 (40)
21-35	20 (20)	14 (14)	34 (34)
36-50	8 (8)	7 (7)	15 (15)
50	6 (6)	5 (5)	11 (11)
Total	62 (62)	38 (38)	100 (100)

Largest number (46%) of cases were from Faridpur district, then 24% were from Rajbari district (Table II).

Table II: District distribution

District	Patients (%)
Faridpur	46 (46)
Rajbari	24 (24)
Gopalganj	10 (10)
Madaripur	8 (8)
Magura	8 (8)
Jhenaidah	4 (4)

Neurological presentation was in maximum (74%) cases, then 12% were presented with both neurological and respiratory features.

Table III: Mode of clinical presentation

Clinical presentations	Patients (%)
Neurological	74 (74)
Respiratory	10 (10)
Gastrointestinal	4 (4)
Neurology and respiratory	12 (12)

Maximum 30% cases came to hospital within 25-48 hours of development of symptoms then 28% were within 49-72 hours and 8% were after 96 hours (Table IV).

Table IV: Time of attained treatment

Time in hours	Patients (%)
< 24	12
25 – 48	30
49 – 72	28
73 – 96	22
>96	8

Case fatality was 17%, 78% got recovery and 5% cases were referred to higher centre.

Table V: Outcome

Outcome	Male (%)	Female (%)	Total (%)
Recovery	48 (48)	30 (30)	78 (78)
Death	10 (10)	7 (7)	17 (17)
Referred	4 (4)	1 (1)	5 (5)

Discussion:

Clinically diagnosed 100 patients of encephalitis who were admitted in Medicine department, Faridpur Medical College Hospital were included in the study, during the period of January to December 2015. Surveillance for encephalitis in Bangladesh reported 264 cases in one year collected from three medical college hospitals, of which a good number of patients were proved to be meningitis later^{2,8}. As the present study excluded meningitis, the number of patient is quiet significant. Sex distribution showed 62% male and 38% female, consistent with other studies^{2,9}. The reason behind this male predominance is not known but may be related to the proportion of male to female beds available in hospital. Age distribution revealed less than 20 years age group comprising the highest number 40%, followed by 21-35 years age-group (34%). Other study revealed >18 years age group affected maximally may be due to inclusion of adult patients only. Most (46%) of the patients came from Faridpur district, may be due to close proximity to the hospital⁴. A large numbers of patients came from Rajbari (24%) and Gopalganj districts (10%) that needed further attention. Presentation of the patients was recorded as neurological (headache fever, altered consciousness, seizure), pulmonary (dyspnoea, cough, abnormal chest X-ray), gastrointestinal (fever, vomiting and diarrhoea) and combined neuro-pulmonary. Present study revealed 74% neurological, 10% pulmonary, 4% gastrointestinal and 12% combined neuro-pulmonary features at presentation. This is consistent with other studies^{4,9}. Maximum number (30%) of patients were admitted in hospital within 25-48 hours of onset of symptoms then 28% were within 49-72 hours. Outcome of patients showed 78% recovery, 17% death and 5% referral to higher center. This is consistent with another studie⁹. But other studies revealed higher mortality rate in Nipha virus encephalitis⁴. This variation may be due to involvement of different agents in the study population. Median interval of onset of illness to death, source and mode of transmission could not be addressed due to lack of data in the hospital records.

Conclusion:

Detection of aetiological agent of encephalitis in Faridpur region is an important concern in health security. Although Nipah Virus was detected in many patients from here in previous outbreaks, other aetiological agent needs further studies for detection. So it is important enough to record the epidemiological characteristics in detail in all suspected encephalitis cases.

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