

## Original Article

# Profile Of Clinically Suspected Encephalitis Patients Admitted To Faridpur Medical College Hospital, Bangladesh

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### Abstract

Encephalitis is a relatively common clinical diagnosis of admitted patients in Faridpur Medical College Hospital. This is significant because there was an outbreak of Nipah Virus (Ni-V) encephalitis in Faridpur district in 2004 with 34 cases including 26 deaths. Recent death of an intern doctor of FMCH from Ni-V encephalitis further emphasizes the gravity of situation. In this study a total number of 100 cases of clinically suspected encephalitis patients were studied for different clinical parameters. This is a retrospective study using data from hospital records. Majority of patients presented with neurological features (85%), 6% with pulmonary, 7% with combined neurological and pulmonary, and 2% with other features. 5-18 years age group comprises the highest number 44%, followed by >18 years age group 34%. Male-female ratio was 33:17. July to November was the period of maximum number of admission, the highest being in August. Patient from all upazillas of Faridpur were admitted, the highest being from Sadar Upazilla. 48% of the patients recovered, 19% expired and 7% were referred. In this context, further prospective study is urgently required to find out the epidemiological characteristics of Nipah virus encephalitis in Faridpur region.

### Introduction

The term encephalitis refers to an acute inflammation of brain parenchyma, often accompanied by inflammation of the adjacent meninges. The degree and type of damage due to encephalitis vary from mild to severe form and from focal to multifocal and diffuse neuro-psychological dysfunction. Encephalitis may result from both infectious and noninfectious causes but most often the causative agents are viruses.

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. Ni-V encephalitis outbreak occurred in Bangladesh<sup>1</sup> in May 2001, January-February 2003, January -February 2004 and March-April 2004. Japanese encephalitis virus was detected in 11% and 28% patients in Rajshahi and Mymensingh Medical College respectively<sup>1,2</sup>.

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 respectively<sup>3-6</sup>. The mode of transmission to human to human is uncertain. 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 main presenting features. Some patients present with cough, breathlessness, hemoptysis, epistaxis or diarrhoea. Neck-rigidity or focal neurological signs are usually absent.

Common laboratory investigations are not diagnostic. Laboratory confirmation needs ELISA, Serology, PCR,

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immunohistochemistry- all are out of capacity of our medical college hospital laboratories. 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 clinico-pathological studies are urgently required.

### 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. 100 such cases admitted during January to December, 2009 were studied for various epidemiological and clinical parameters available in case records.

### Results

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

Table I: Number of patients

Total Patient	Clinical Encephalitis	Percentage
8325	100	1.2%

1.2% of the admitted patients were clinically suspected as encephalitis.

Table II: Age and Sex Distribution

Age group	Male %	Female %	Total %
<1 year	5	4	9
1-5	11	2	13
5-18	29	15	44
>18	21	13	34
Total	66	34	100%

Of total cases, 66% were male and 34% female. 5-18 years age group comprised majority of the patient (44%), followed by >18 years group (34%).

Table III: Upazilla distribution

Faridpur District		Other Districts	
Sadar	16	Rajbari	3
Bhanga	7	Goalonda	4
Nagorkanda	7	Pangsha	5
Boalmari	10	Baliakandi	1
Saltha	4	Madaripur	18
Alfadanga	2	Magura	11
Madhukhali	3	Gopalganj	5
Charvadrashan	1	Manikgonj	1
Sadarpur	1	Narayanganj	1

Patients are distributed in all upazilla of Faridpur and adjacent districts. In Faridpur, maximum patients came from Sadar (16%) and Boalmari (10%) upazilla. Among other districts, a large number of patients (18%) came from Madaripur.

Table IV: Month distribution

Month	Patients (%)	Month	Patients (%)
January	1	July	10
February	7	August	18
March	1	September	11
April	6	October	17
May	7	November	10
June	4	December	8

Patients were admitted round the year, higher being in July- November period.

Table V: Presentation

Feature	Number of patients
Neurological	85%
Pulmonary	6%
Combined neuro-pulmonary	7%
other (diarrhoea, haematemesis)	2%

Majority (85%) patient presented with neurological feature, 2% patients had gastrointestinal feature.

Table VI: Outcome

Outcome	Number of patients
Recovery	74%
Death	19%
Referred	7%

Case fatality rate was 19%, 74% patients recovered and 7% patients were referred to higher centre.

## Discussion

During the study period, total number of patients admitted into Medicine and Paediatric inpatients department was 8325 of which 100 (1.2%) patients were clinically diagnosed as encephalitis. 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<sup>1,7</sup>. As the present study excluded meningitis, the number of patient is quiet significant.

Sex distribution showed 66% male and 34% female, consistent with other studies<sup>1</sup>. 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 5-18 years age-group comprising the highest number 44%, followed by >18 years age-group (34%). Other study revealed >18 years age group affected maximally may be due to inclusion of adult patients only. Regarding upazilla, most (16%) of the patients came from Sadar upazilla, may be due to close proximity to the hospital<sup>3</sup>. A large numbers of patients came from Madaripur (18%) and Magura districts (11%) that needed further attention. Seasonal variation revealed highest number of admission in August (18%), followed by October (17%), September (11%), July (10%) and November (10%). This is not consistent with the period of highest transmission of Nipah virus which is from December to March. It may be due to involvement of aetiological agents other than Nipah virus that need to be detected by further study.

Presentation of the patients was recorded as neurological (headache fever, altered consciousness, seizure), pulmonary (dyspnoea, cough, abnormal chest X-ray), combined neuro-pulmonary and other features (diarrhea, haematemesis). Present study revealed 85% neurological, 6% pulmonary, 7% combined and 2% with other features at presentation. This is consistent with other studies<sup>3</sup>. Outcome of patients showed 74% recovery, 19% death and 7% referral to higher center. Other studies revealed higher mortality rate in Ni-V encephalitis<sup>3</sup>. This variation may be due to involvement of different agents in the study population. Median interval of onset of illness to admission, onset of illness to death, source and mode of transmission could not be addressed due to lack of data in the hospital records.

## Conclusion

Although Nipah Virus was detected in many patients from Faridpur region in previous outbreaks, likelihood

of other aetiological agent need further studies for detection. For studying the epidemiological characteristics more detail case record in especially designed format should be maintained in all suspected encephalitis cases.

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