

DISTRIBUTION OF ENCEPHALITIS IN DHEMAJI DISTRICT OF ASSAM

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ABSTRACT:

Dhemaji district is the boarder district of Assam. Where every years especially in the month of june,july and august maximum numbers of encephalitis patients were reported. Our study tried to identify to find out the causative organism of these diseases. We have collected the blood samples from different encephalitis patients after consent from patient's guardian. The study duration was from 2013 to 2014. The samples were tested for Malaria, Japanese encephalitis, Dengue and Scrub Typhus only by different tests. Where we have found 39.05 % encephalitis patients were affected due to Japanese Encephalitis, 0.66% due to Dengue and 4.63% were due to Scrub Typhus. All the samples were negative for malarial parasite by microscopy.

1.INTRODUCTION:

Encephalitis is a disease with the symptoms of fever, headache, confusion, neck rigidity, confusion, seizures etc. The disease having very much public health importance as its mortality and morbidity are very high. The causative organisms of this disease may be bacteria, virus, parasite, fungi etc. which infects the brain ^[1]. The bacterias are may be cocci, bacilli etc. The cocci are like streptococci,

staphylococci and bacilli are certain Gram-negative bacilli. Treponema pallidum also an important bacteria which may also causative for encephalitis. Again the viruses are may be JC virus, rabies virus, flavivirus, poliovirus, Herpes simplex, measles virus, varicella zoster virus, etc. The parasites may be Plasmodium parasite, toxoplasma sp. Etc. ^[2]. To diagnose this disease CSF (cerebrospinal fluid) can be collect for examination which may shows more than normal protein and WBC (white blood cells). But which cannot confirm the causative organism. Because of which specific suspected organism test is most important.

In western countries in every year 7.4 cases infected with acute encephalitis per one lakh population ^[3]. In the year 2013 it was recorded that the death rate due to encephalitis decreases to 77,000, which was 92,000 in the year 1990 ^[4]. Which prove the health organization has played their duty very hardly. Japanese encephalitis is the main encephalitis disease of Assam ^[5]. As this is found prevalence in Assam since 1976 ^[6]. That is why preference is given first to all samples for Japanese Encephalitis test.

There is no specific treatment for encephalitis. The treatment of encephalitis is mainly symptomatic. Though some of the encephalitis having specific

treatment like if the encephalitis is due to Toxoplasma sp. the treatment is the combination of sulphadimidine and pyrimethamine, if the encephalitis is due to Mycoplasma infection the treatment is parenteral tetracycline. For which causative organism must be identified. Again to prevent the disease also cause or route must be identified.

2.METHODOLOGY:

Our study covers the whole area of Dhemaji district. This is a border district of Assam with Arunachal Pradesh. We have collected the blood samples from the encephalitis reported patients (2013 to 2014) from Dhemaji at North Lakhimpur Civil hospital (Lakhimpur), Dhemaji Civil Hospital and different BPHCs of Dhemaji district. Blood smears were prepared and Serum samples were collected. Serum samples were prepared from whole blood, which were centrifuged at 3000 rpm for 15 minutes after 20 minutes stand from collection in test tube with a state reack. The samples were tested for Malaria, dengue , Japanese encephalitis and scrub typhus only.

Malaria- Both the thick and thin films were prepared and allowed to dry. After drying, slides were stained with JSB staining solution. At the time of completion of staining, smears (films) were again allowed to dry and observed under oil immersion of electric binocular microscope to identify the malarial parasite.

Dengue- Based on the date of onset NS1 ELISA or IgM ELISA test were done. From the date of onset to seven days NS1 ELISA tests were done and from seven days after onset to above days IgM ELISA tests were done.

Japanese Encephalitis- IgM ELISA tests were done to check Japanese Encephalitis infection. Where developed colour after antigen antibody reaction was readed against 450 nm with the help ELISA reader of Robonik.

Scrub Typhus- IgM ELISA tests were done.

3.IMAGES:



Image 1: Encephalitis patient admitted at District Hospital

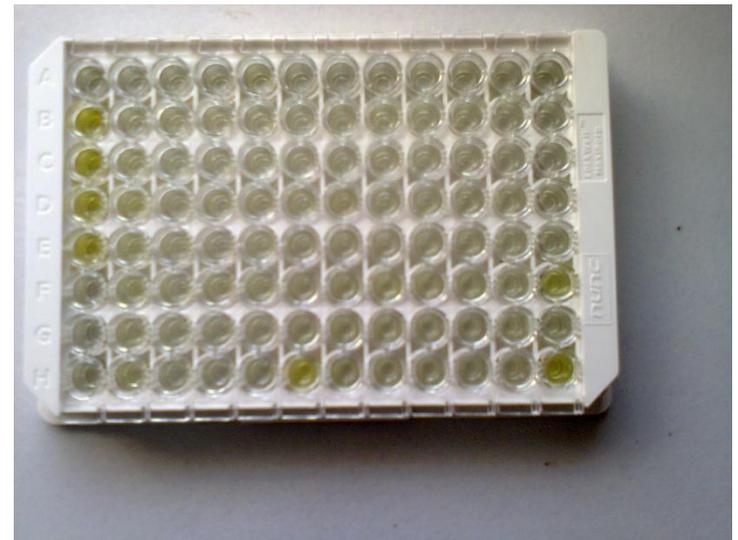


Image 2: IgM ELISA Plate Visual color change of positive samples before recording the result



Image 3: People’s living behavior in villages of study area

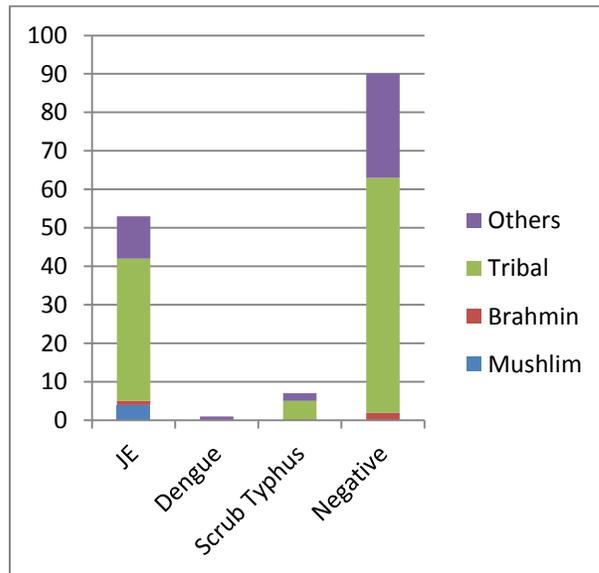


Figure 2: Community wise distribution of diseases

4.FIGURES:

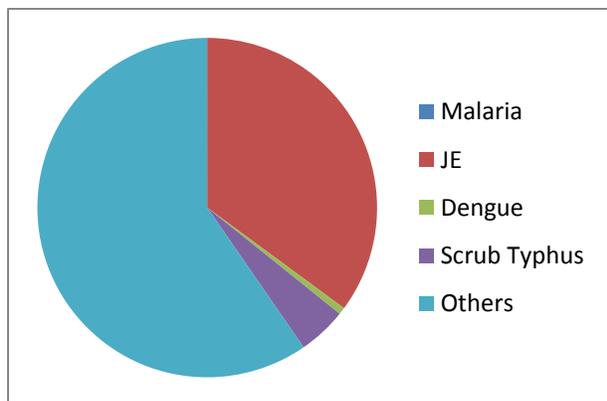


Figure 1: Distribution of Encephalitis

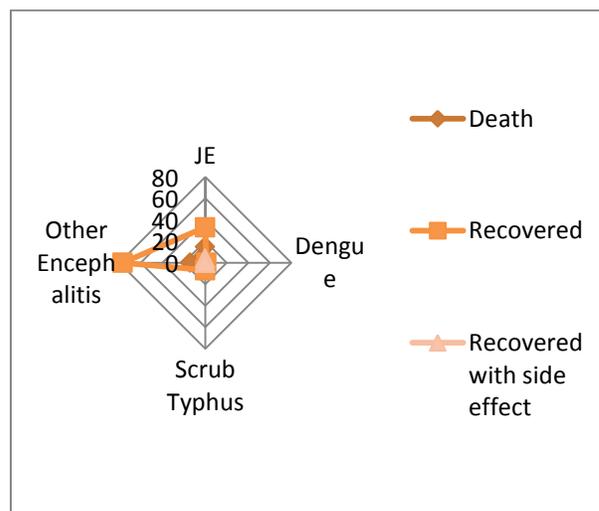


Figure 3: Death and recovery rate of Encephalitis

5.RESULTS:

In our study 151 (one hundred fifty one) numbers of encephalitis patients were tested for Malaria, Japanese Encephalitis, Dengue and Scrub Typhus only. Out of which all the patients were negative for malarial parasite. But 53 (fifty three) numbers patients were positive for Japanese Encephalitis. Which positivity percentage was 35.09 % (53/151). One (1) number of patient was positive for Dengue and its positivity percentage was 0.66% (1/151). Seven (7) numbers of patients were positive for scrub typhus i.e. 4.63% (7/151).

Again it was observed that no death occurred due to Dengue and Scrub typhus but 15 (fifteen) numbers of patients were death due to Japanese Encephalitis, in percentage which was 28.30 % (15/53).

6.DISCUSSION:

It was observed that Japanese Encephalitis is more important to study and control in the Dhemaji district of Assam in comparison with dengue and Scrub Typhus. Again encephalitis which were not diagnosed in our study, need to check to control the disease by identifying causative organism. The positivity percentage of other encephalitis (which werefound Negative by the tested) was 59.60 % (90/151). To identify the cause and route or vectors of other encephalitis, district health authority must introduce the different tests in district health laboratory which may prevails for encephalitis in the Dhemaji district of Assam.

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