

APIS MELLIFICA, A PREVENTIVE FOR JAPANESE B ENCEPHALITIS

**DR. D. K. GUPTA, B.SC., D.M.S., Dip. N.I.H. (Hons.) &
DR. (MRS.) S. GUPTA, D.H.M.S., Dip. N.I.H. (Hons.), Midnapore**

ABSTRACT: Japanese B encephalitis created a scare, not only in the campus of Indian Institute of Technology, Kharagpur but almost in the whole of Midnapore district of West Bengal. This paper deals with preventive medicinal and socio-medical aspect of this disease which culminated in near epidemic form. A homoeopathic medicine, as preventive has proved quiet efficacious. The reasons for selecting this medicine, potency and doses are discussed here.

INTRODUCTION

Japanese B encephalitis in Midnapore district of West Bengal, though started in sporadic form, gradually took the shape of an epidemic. Uptil now 127 cases of viral encephalitis have been reported of which 48 proved fatal and many others are gradually marching towards grave, although till 7th October 1982 45 cases were reported in isolated form in and around Kharagpur area and 15 died of it. As many as 32 patients out of 45 were alone admitted in South Eastern Railway Hospital, Kharagpur. After collecting signs and symptoms from the reported cases in different hospitals of Midnapore district, it was diagnosed as Japanese B encephalitis which was confirmed by the School of Tropical Medicine, Calcutta, after thorough serological examination, showing the presence of virus in 45% cases. Apis mellifica 200 and 1M were distributed as preventive medicine among children and adults respectively, totalling 18,238 persons in and around Indian Institute of Technology campus namely Turipara, Vishwaranjanagar, Talbagicha, DVC substation area, Balarampur and part of South Eastern Railway residential quarters. After following up the cases for 50-55 odd days, while the disease was marching towards its epidemic zenith, not a single case was reported among the people who were administered with the said preventive medicine.

HISTORICAL BACKGROUND

The first outbreak of epidemic viral encephalitis in India was reported in 1954 at Jamshedpur Hospital. This epidemic gradually moved in north-west direction and covered a wide area in Eastern and Western U.P., Munghyr, Patna, Hardoi, M.P., Punjab and Delhi. Again in 1973, it appeared in epidemic form in the districts of Bankura and Burdwan of West Bengal as reported by Seal;¹ Japanese B encephalitis virus was isolated on autopsy from brain tissues in 1974. It also occurred in sporadic form in 1980 again covering much wider area in West Bengal, Bihar, Assam and U.P.

GEOGRAPHICAL COVERAGE

The nomenclature Japanese B encephalitis goes after its first outbreak in epidemic form in Japan in 1871 and ever since it is occurring there quite frequently. In the year 1924, it was diagnosed as viral encephalitis and in 1935 it was termed as Japanese B encephalitis after isolating the virus, to distinguish it from von Economo's epidemic of encephalitis lethargica, Kawamura et al., 1936², which is termed as Japanese A Encephalitis. Japanese B Encephalitis has earlier caused death to many valuable lives in India and other countries too. The epidemiological report of W.H.O.³ of 1952, published in 1955, showed its prevalence in Australia, 22 countries of Europe, 17 countries of North and South America, 16 of Africa and 13 of Asiatic countries.

AETIOLOGY

In tropical climate there are no seasonal variations as such; however, it has been found from earlier reported cases that the heaviest incidences were seen in the months of September and October. Earlier, in 1954 epidemic, the highest incidences were recorded in July. The mosquito *C. tritaeniorhynchus* is the major vector species, which breeds in rice fields and preferentially bites domestic animals such as pigs, cattle, etc. Human beings are accidental host in the transmission cycle. Therefore, it appears that these domestic animals are intermediate host in the transmission of this disease. According to Hati⁴ of the School of Tropical Medicine (1976), three types of mosquitoes namely *C. vishnui*, *A. hyrcanus* and *A. barbirostris* were found infected in epidemic of West Bengal in 1974. The viruses causing encephalitis can be grouped in following four categories¹:

- (1) The enteric virus multiplying in intestinal tract, e.g. poliomyelitis.
- (2) Arthropod born viruses which escape into blood stream of human being by the bite of mosquitoes, e.g. equine encephalomyelitis, Japanese B etc.
- (3) Encephalitis may also accompany or follow some acute infections e.g. mumps, measles, chicken pox, herpes simplex etc.
- (4) Rabies.

In the latter two categories, the aetiological analysis can be performed by common pathological techniques, whereas former two pose considerable difficulties.

From various surveys and reported cases of Japanese B encephalitis, it has been found that children are more vulnerable to it, than adults as evidenced by serological survey study of Australian troops in Vietnam which is 210:1 (Harrison)⁵.

PATHOLOGICAL FEATURES

The clinico-pathological features of Japanese B encephalitis are moderately neurotropic, attacking mainly nerve cells and nervous tissues. There

may be meningo-encephalitis with slight infiltration of the meninges and severe damage to neurons.

CLINICAL PICTURE

Sudden onset with severe rigor and headache is seen in almost 95% of the cases, which is immediately followed by high rise in temperature to 104°F or above accompanied with moaning cry, congestion of eyes with dilated pupils, etc. within 24 hrs. of fever. Patients gradually lose consciousness, become delirious and often talk incoherently followed by twitching of muscles then convulsions and ultimately turn into a state of unconsciousness. Some of the patients also complain of backache. On examination, like other viral infections, here too there is relative bradycardia, tachypnoea followed by shallow respirations until death occurs. Neck rigidity, Kernig's sign, exaggerated knee jerks are invariably present in almost all patients. Blood picture reveals polymorphonuclear leucocytosis; C.S.F. shows abundant pleocytosis where polymorphonuclear leucocytosis predominates in early stages followed by dominance of mononuclear cells. In some cases urine is found to contain albumin, sugar, and occasionally R.B.Cs. In 50% of cases stool examination show pus cells and R.B.Cs. These features indicate probable damage of kidneys, resulting in leakage of sugar, pus cells and R.B.C. In stool, it may, however be due to toxic effect of viral infection.

HYGIENE AND CONTROL

(a) The most effective way of controlling this dreadful disease is insecticide and larvicidal applications in as large area as possible.

(b) Isolation of domestic animals like pigs, cows, buffaloes etc. since they are the intermediate host. Pigs, however, are the principal intermediate host.

(c) Immediate hospitalisation of patients presenting any of the symptoms in those areas where there is chance of epidemic. Social education of the people of such areas regarding importance and uses of mosquito net and boiled, cooled and filtered water, will have another added advantage in controlling the further spread of disease.

THE PRESENT CONTEXT AND A HOMOEOPATHIC APPROACH

Before coming to the homoeopathic preventive approach which is adopted and assessing its efficacy, authors believe that it is absolutely essential that socio-economical picture, geographical disposition, nature and magnitude of threat of spread of this disease should be discussed, where these preventive measures were applied. Indian Institute of Technology campus which covers approximately 1400 acres of surface area, has a population around 11,000. This population ranges from higher middle class consisting of highly qualified teachers to a considerable number of slum dwellers belonging to lower strata. These slum dwellers are basically sweepers, casual labourers

(a) Severe headache, (b) confusion of mind, (c) high temperature preceded by chill and rigor, (d) pseudoplethoric look, (e) profuse sweating, (f) extreme thirst, (g) scanty urine, (h) dilated pupils, (i) congested eyes, (j) white coated tongue (some patients presented bright red tongue) etc. To arrive at single drug which covers such bizarre signs and symptoms, authors took the help of Kent's *Repertory*⁶. Undermentioned rubrics were selected for repertorisation:

| Rubrics | Page No. in Kent's Repertory ⁶ |
|------------------------------------|---|
| 1. Cerebro-spinal fever | 1282 |
| 2. Headache, in general | 132 |
| 3. Back stiffness, cervical region | 947 |
| 4. Extreme thirst | 529 |
| 5. Profuse sweat | 1299 |
| 6. Shivering | 1290 |
| 7. Dilated pupils | 263 |
| 8. Constipation | 606 |
| 9. Convulsion | 1351 |
| 10. Tongue, discolouration white | 402 |
| 11. Tongue, discolouration red | 401 |
| 12. Scanty urine | 688 |
| 13. Unconsciousness | 89 |

After repertorising, we arrived at a number of remedies namely Arsenic (securing 30/12), Apis (30/13), Belladonna (32/12), Gelsemium (24/10), Phosphorus (28/11) and Sulphur (29/12). Thereafter, various *materia medicas* were consulted to arrive at the single *similinum*. Apis Mellifica was eventually selected.

WHY APIS?

A question obviously arises why Apis mellifica? Why not Arsenic or Belladonna or Gelsemium or Phosphorus or Sulphur? Undoubtedly, these drugs come very close to Apis on repertorisation but the symptomatological presentation of Japanese B encephalitis has so much closer resemblance with cerebro-spinal fever that one cannot afford to overlook it or give less weightage to it, while trying to find out a remedy for it—irrespective of preventive or therapeutic aspects. Moreover, in places like Midnapore, where equipment for special type of investigations for example, serum examination for detection of virus etc. is lacking, importance of such symptoms gains more and more priority. Arsenic, Phosphorus and Sulphur do not cover vital pathology of this disease so widely, though close contestants of Apis are Bell. and Gels. In repertorising they were given less importance while selecting a medicine as preventive for Japanese B encephalitis. Again, Gelsemium does not cover a good number of symptoms while repertorising, thus

only partially similar to the symptom-totally of this epidemic in West Bengal. Moreover, Belladonna is not so deep-acting as is Apis mellifica.

POTENCY AND DOSES

Authors decided to give 200 and 1M potencies among children and adults respectively for easy distribution among a large number of people. It was decided that those below the age of 10 years are to be put into the category of children, and above that will be adults. No doubt many will come forward with serious criticism for such a classification of child and adult. But authors are sorry to say that they had no other easy way of classifying the age group at that stage. It was also true that the pace of disease was so fast that they did not dare to take the risk of administering lower potencies say, 6 or 30. In case of children, 200 potency twice a day for two days and for adults 1M potency once daily for three consecutive mornings were considered ideal for producing immunity.

Apis mellifica in 200 and 1M potencies were distributed among 18,238 persons in undermentioned age groups of males and females:

| Age | Males | Females | Total |
|----------------|-------|---------|-------|
| Below 10 years | 2581 | 3903 | 6484 |
| Above 10 years | 6102 | 5652 | 11754 |
| Total | 8683 | 9555 | 18238 |

While distributing this preventive medicine in different areas it was advised that they should contact immediately homoeopathic department of B. C. Roy Technology Hospital, I.I.T., Kharagpur for any sort of problem arising after taking the said medicine. A few subjects came with some adverse symptoms after taking medicine in the form of severe frontal bursting headache, loose watery bowels and pain and stiffness of lower extremities. The statistics of such cases are presented below:

| Age | Percentage of untoward symptom presentation | Male | Female |
|--------------------|---|-------|--------|
| 10 years and above | 0.22% | 0.14% | 0.08% |
| Below 10 years | Nil | Nil | Nil |

All these untoward symptoms were manifested among people belonging to the age group of above 10 years. However, there was only one case which proved idiosyncratic since he produced a good number of symptoms of Apis after taking a single dose of medicine. In this case medicine was stopped immediately. Incidentally, in two cases, long standing eczema of about 11 years and 14 years, gradually started abating. All the cases were followed up for a period of 50 to 55 days. Till this date after administration of the medicine not a single patient suffered from Japanese B encephalitis. Fur-

thermore, during this interval another 937 heads of the same age groups were given this preventive medicine. Their cases are still being followed up.

CONCLUSION

With these encouraging results authors feel that *Apis mellifica* has worked quite successfully, upto now in this small area of Midnapore district in West Bengal as genus epidemicus. Incidentally, quite a lot has been said about *Belladonna* and *Gelsemium* as preventive of Japanese B encephalitis by other eminent physicians. However, no definite guidelines were given for administration of these medicines. A question obviously arises whether they should be given alternately or together. Moreover, potency and doses, which are of paramount importance remain unexplained. Authors feel that senior homoeopaths and colleagues will definitely come forward with some constructive criticism and enlighten us with better homoeopathic approach to tackle such a dreadful disease.

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