

Case Report on Nursing Management of Japanese Encephalitis with Convulsion

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Abstract

Background: Japanese encephalitis (JE) is an important viral disease-causing fatal condition in children. Vaccination against JE is a significant preventive measure as the specific drugs are not available for treatment. It shows symptoms including Fever, altered sensorium, and Muscle. **Patient presentation:** We are presenting a 2-year-old male child who visited the pediatric outpatient unit with the symptoms of muscle rigidity, fever, and seizure, he was admitted to pediatric ward no.-17. He was a known case of Japanese Encephalitis. He was diagnosed to have seizures at the age of 1 year when he was admitted to the hospital due to fever. Till then, he was admitted to a private hospital from time to time because of a critical condition in PICU and was on higher multi anti-epileptics. There are not any abnormalities found in the head-to-toe examination, the child is thin and looks dull and also his muscle looks stiff and neck movements are very slow. He is a weak child. The patient's physical and clinical examination was taken. He was treated with high multi-epileptics and physiotherapy is continued. After treatment, the patient's condition improves. Symptoms such as fever, altered sensorium, and convulsion are minimized and muscle stiffness is improved. **Conclusion:** It can be transmitted to humans by mosquitoes belonging to the species *Culex* (mainly *Culex tritaeniorhynchus*), which breed mostly found in rice paddles. A mosquito carrying Japanese Encephalitis can transmit it by feeding on pigs and wild birds carrying the disease. It cannot be transmitted from person to person. As a result of the dramatic increase in vector populations during rainy seasons, diseases are highly transmitted. There is no cure for the disease, but there are vaccines that can prevent the spread of the disease. By treating the infection, the patient can protect themselves from further damage and will be relieved of severe clinical signs.

Keywords: Convulsion, Fever, Japanese Encephalitis, Muscle Rigidity.

INTRODUCTION

Japanese encephalitis (JE) is an important viral disease-causing fatal condition in children. Vaccination against JE is a significant preventive measure as the specific drugs are not available for treatment. (1) At present three types of JE vaccines are available, i.e. mouse brain-derived and inactivated viral vaccine, cell-culture-derived inactivated vaccine, and live attenuated vaccine. (2) Japanese encephalitis virus JEV is the most important cause of viral encephalitis in Asia. It is a mosquito-borne flavivirus and belongs to the same genus as dengue, yellow fever, and West Nile viruses. (3) The first case of Japanese encephalitis virus disease (JE) was documented in 1871 in Japan.

The annual incidence of the clinical disease varies both across and within endemic countries, ranging from <1 to > 10 per 100000 population or higher during outbreaks. (4) A literature review estimates nearly 68,000 clinical cases of JE globally each year, with approximately 13,600 to 20,400 deaths. JE primarily affects children. (5) Most adults in endemic countries have natural immunity after childhood infection, but individuals of any age may be affected. (6)

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CASE PRESENTATION

We are presenting a 2-year-old male child who visited the pediatric outpatient unit with the symptoms of muscle rigidity, fever, and seizure, which was later diagnosed as Japanese encephalitis after further investigation. The patient was weak and inactive when admitted. As narrated by the patient's mother he had convulsions over and over and he was straining during defecation. For that, he was given multi anti-epileptic medications from the regional clinic but still did not get relief. Further, he was referred to us.

On physical examination, the child was thin and looked dull also his muscle looks stiff and neck movements are very slow. He is a weak child, blood investigations were done and it shows that the Hb was very low (6 gm%). So the blood transfusion was given with blood group O+ve. Neurological examinations were conducted by neurologists and the result is muscle strength, muscle tone, muscle feeling, tendon reflexes, aphasia, and cranial nerve system symptoms like salivation, vision loss, and sensorium poor, when admitted he was having pressure sores over the scalp, coccygeal area and left ear (Blackish discoloration) pinna size approx. 1.5 to 1 cm.

He was treated with frequent changes in position to prevent pressure sore, adequate water pillows (glove pillows), T. The back moment for the left ear (Blackish discoloration), Eptoin twice a day (3.5 ml), Syrup. Levera twice a day (1.2 ml), Syrup. RDpene twice a day (5 ml), Syrup. Deocal twice a day (2.5 ml), Syrup. Tus-Q twice a day (5 ml), Tab. Frisium once a day (5 mg), Tab. Aspirin once a day (75 mg) (Dissolve in 10ml NS), Tab. Baclofen once a day (10 mg) (Dissolve in 10 ml), Nebulization with NS 3% levolin thrice a day (5 ml), and regular physiotherapy. After treatment, the patient's condition improves. Symptoms such as fever, muscle rigidity, and convulsions are relieved after medications and physiotherapy. After discharge, the health education of regular exercises was explained to the patient's mother.

DISCUSSION

Japanese encephalitis (JE) is one of the most serious viral infectious diseases of the central nervous system in Asia. The clinical manifestations of it might be non-specific. Antibiotics were given to treat infection and physiotherapy is given to relieve muscle rigidity. (7-18)

The Japanese encephalitis (JE) virus is a flavivirus that is widespread in Asia and is spread via mosquitoes. Less than one case is thought to occur in every million passengers in non-endemic countries. The majority of human JE infections are asymptomatic or only result in moderate, non-specific fever. (19-28)

As one is exposed to more mosquitoes and spends more time in areas and during active transmission seasons, the chance of contracting JE should rise. Though extremely

uncommon among travelers, JE has a high fatality rate of about 1 in 3 and a significant likelihood of long-term brain impairment. (29)

There are many different potential causes of seizure disorders. But frequently, the root cause is still a mystery. For instance, vaccinations can cause seizures, especially in young children. Numerous examples of febrile convulsions that followed the administration of several vaccines, such as the measles, mumps, and rubella vaccine or tetanus and diphtheria vaccine, have been documented in the literature. Few adult incidences of epilepsy following immunization have so far been documented. (30-31)

Christoph Schulze et al reported none of the examinations revealed a possible cause for the seizures. Since no structural or genetic causes were detected, the seizures were deemed most likely to have been caused by the vaccinations, especially vaccination against Japanese encephalitis. To date, no medication has prevented our patient from having repeated attacks. (31)

CONCLUSION

Japanese encephalitis (JE) is an important viral disease causing the fatal condition in children. Treatment strategies in patients with Japanese Encephalitis require medications to relieve symptoms, physiotherapy is intended to restore muscle movements by treating the rigidity of muscle, and neck movements and improving symptoms. To the best of our knowledge, no examples of seizures occurring after several immunizations in general or after vaccines against Japanese encephalitis, in particular, have ever been documented in the literature. Although vaccinations are evaluated before being made available, it is not always possible to prevent the emergence of new adverse responses. Treatment of seizures following immunization is challenging. Different strategies haven't produced a pleasing outcome for our patients yet.

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