



Research Journal of Pharmaceutical, Biological and Chemical Sciences

Dengue Fever: Case Study

V Yasodha*.

Sree Balaji College of Nursing Bharath University, Chennai 44, Tamil Nadu, India.

ABSTRACT

Dengue fever, also known as break bone fever, is a mosquito-borne tropical disease caused by the dengue virus. Dengue is spread by several species of mosquito of the Aedes type, principally A. aegypti. The virus has five different types; infection with one type usually gives lifelong immunity to that type, but only short-term immunity to the others. Subsequent infection with a different type increases the risk of severe complications. A number of tests are available to confirm the diagnosis including detecting antibodies to the virus or its RNA

Keywords: dengue, break bone fever, hemorrhagic fever, aedes, aegypti, immunity

**Corresponding author*

INTRODUCTION

Dengue fever, also known as breakbone fever, is a mosquito-borne tropical disease caused by the dengue virus. Dengue is transmitted by several species of mosquito within the genus *Aedes*, principally *A. aegypti*.

In a small proportion of cases, the disease develops into the life-threatening dengue hemorrhagic fever, resulting in bleeding, low levels of blood platelets and blood plasma leakage, or into dengue shock syndrome, where dangerously low blood pressure occurs.

Case presentation

A 26-year-old young man was diagnosed with dengue fever. His symptoms were high-grade fever associated with severe retro-ocular pain, bone pain and severe body aches of three days duration. He was self medicating with 500mg Paracetamol tablet.

Incident

- Resident of or visitors to tropical urban areas
- Increased severe and fatal disease in children under 15 years
- No cross – immunity from each serotype.

Pathophysiology [1]

The pathogenic mechanism of DHF is not clear, but two main pathophysiologic changes occur

- Vascular permeability increases which results in plasma leakage, leading to hypervolemia and shock
- Abnormal haemostatic, due to vasculopathy, thrombocytopenia and coagulopathy, leading to various hemorrhagic manifestations.

There is evidence suggesting that cell mediated immune response may also be involved in the pathogenesis of DHF.



Clinical Manifestation [5]

BOOK PICTURE	PATIENTS PICTURE
<ul style="list-style-type: none"> • High fever for 5-7 days 	Yes
<ul style="list-style-type: none"> • Nausea, vomiting, no appetite, diarrhea, constipation. 	Yes he possess
<ul style="list-style-type: none"> • Headache. 	Yes
<ul style="list-style-type: none"> • Swelling around the eyes. 	Not observed
<ul style="list-style-type: none"> • Sore muscles, joints, abdomen, and heartburn. 	Yes

Diagnostic Evaluation [6]

Book Picture	PATIENT PICTURE
CBC	
Haemoglobin (14 – 16 gm/dl)	9 g/dl (decreased)
Packed cell volume	32%
Total RBC Count	2.8 millions/cumm
MCV	75 fl
MCH	22 pg
MCHC	24g/dl
Platelet count (1.5- 4 cells/cumm)	80000 cells/cumm
Total WBC	4000 cells/cumm
Differential Leukocyte Count	
Neutrophils	55
Lymphocytes	15%
Monocytes	3%
Leucopenia	Not done
Acidaemia	Not done

Medical Management:

- Rest
- Antipyretic- paracetamol 500mg every 4 to 6 hours
- Tepid sponging

DIET AND ACTIVITY

No specific diet is necessary for patients with dengue fever. Patients who are able to tolerate oral fluids should be encouraged to drink oral rehydration solution, fruit juice, or water to prevent dehydration from fever, lack of oral intake, or vomiting. Return of appetite after dengue hemorrhagic fever or dengue shock syndrome is a sign of recovery.

Bed rest is recommended for patients with symptomatic dengue fever, dengue hemorrhagic fever, or dengue shock syndrome. Permit the patient to gradually resume their previous activities, especially during the long period of convalescence.

Nursing Intervention for Dengue Fever [6]

- Assess the general state and condition of the patient
- Observation of vital signs (temperature, pulse, respiratory rate)
- Observation for signs of dehydration
- Observation drip infusion and intravenous needle insertion site
- Balance of fluid (the fluid input and output)

- Give the patient and family encourage patients to drink a lot
- Instruct the patient's family to replace the patient's clothing is wet with sweat.

PREVENTION [2,3]

The only way to prevent dengue virus acquisition is to avoid being bitten by a vector mosquito. Although this can be accomplished by avoiding travel to areas where dengue is endemic, that is not an ideal strategy because it would require a person to avoid most tropical and subtropical regions of the world, many of which are popular travel and work destinations. Other measures are as follows:

- Wear N,N-diethyl-3-methylbenzamide (DEET)—containing mosquito repellent
- Wear protective clothing, preferably impregnated with permethrin insecticide
- Remain in well-screened or air-conditioned places
- The use of mosquito netting is of limited benefit, as Aedes are day-biting mosquitoes
- Eliminate the mosquito vector using indoor sprays

The most widely used mosquito-control technique, spraying cities to kill adult mosquitoes, is not effective. Efforts should target the larval phase with larvicides and cleaning up larvae habitats. Poor sanitation and poor refuse control provide excellent conditions for mosquito larvae to grow. Hurricanes and other natural disasters increase the habitat for mosquito growth in urban areas by increasing rubble and garbage, which act as water reservoirs.

Breeding of vector mosquitoes can be reduced by eliminating small accumulations of stagnant water around human habitats (eg, disposing of old tires, covering water receptacles, and changing water in birdbaths daily). Support community-based vector control programs (including source reduction) and the use of vectoricidal agents, including predatory copepods as biological control agents.

Outbreaks of dengue will increasingly cross common borders of endemic and disease-free countries unless the following measures are undertaken:

- Increased health surveillance
- Prompt reporting of new cases
- Heightened professional awareness
- Public education

SUMMARY

The patient was very cooperative with health personnel; although his symptoms were well Responding to treatment. He is recurring from dengue fever and there is not any complication during his hospitalization.

CONCLUSION

During my care period patient was co-operative. He accepted my care and health education. He was feeling better after his hospitalization.

As we are nurses we have to give health education to the patients and family members about the preventive measure.

REFERENCES

- [1] BT Basavanthappa 'Text book of Community Health Nursing' Second edition, Jaypee publisher, 682-685
- [2] Billingsley PF, Foy B, Rasgon JL. Trends Parasitol 2008;24(9):396-400.
- [3] Erlanger TE, Keiser J, Utzinger J. Med Vet Entomol 2008;22(3):203-21.
- [4] www.ncbi.nlm.nih.gov



- [5] <http://www.webmd.com/a-to-z-guides/dengue-fever-reference>
- [6] Brunner and suddarth's, text book of medical surgical nursing, eleventh edition, published by wolters kluwer.
- [7] K. park, text book of preventive and social medicine, 17th edition, jaypee brothers publisher.