Case Report: Dengue Hemorrhagic Fever in Children

Maria Wahyu Daruki

Primary Health Care Center (Puskesmas) Banjarangkan II, Klungkung, Bali, Indonesia

Training Participant of Primary Care Doctors Preceptors - Ministry of Health Republic of Indonesia 2017

Corresponding Author
E-mail: dr_lea_dps@yahoo.com

To cite this article:

CASE REPORT

A female patient came to the Puskesmas with the patient’s child with complaints of fever for 4 days before going to the Puskesmas. The patient began to feel the body shivering 4 days ago and feeling pain throughout the body accompanied by the shivering and not having energy/feeling weak. At present, patient complains of headaches, joint pain, and nausea. The patient checked the body temperature which was around 38-39°C for 2 days ago. The patient did not complain of swallowing pain, decreased appetite, but she still ate a lot to improve the condition. The fever would rise suddenly during the day, and the patient only took the drug paracetamol but the fever and pain decreases only slightly. Patient then went to the Puskesmas to get blood checked at that time obtained laboratory results of 138,000/μl platelet count, hematocrit 46.7% and leukocyte rate 3,200/mm³. The patient was given medication by a doctor at the Puskesmas including paracetamol 3x500 mg and vitamin C, and was recommended to get treatment again the next day. At the time of treatment, the patient’s condition was still weak, headache was still persistent, and also joint pain was still present. Then blood was tested again, and platelet results were 70,000/μl, hematocrit 70.1% and leukocyte count 6,500/mm³. The patient reported that around her home there was 1 child who was treated for dengue fever. The patient complained of nausea but did not vomit. The gums were not bleeding and there were no nosebleeds, then she was given an RL test with a positive result. Patient was then advised to be referred to the Regional Public Hospital to get further treatment. The patient had never experienced this condition before. The patient had typhus once but was not hospitalized, and treated only with outpatient care. Other past illnesses were just cough and the common cold, and no serious illnesses. The patient has a drug allergy to ciprofloxacin.

Biological and Psychosocial Diagnoses

The biological diagnosis is dengue hemorrhagic fever (DHF) grade II, with symptoms of fever for 4 days with headache, joint pain, and nausea, while blood manifestations and changes included an increase in hematocrit >20%, and decreased platelet count <100,000/μl.

Psychosocial diagnosis is the mother’s concern for her illness if she has to be hospitalized. The patient is a housewife who has 2 children who are aged 14 and 13 years old. Before she got married, the patient worked as a cashier at a minimarket in Klungkung City and then stopped because she was asked by her husband to focus on raising her children, so that now the income is derived only from the husband’s salary. The husband works as a manager in a company in the Gianyar City, which he is very busy and works from morning through the evening to night, so communication between husband and patient is lacking. Patient stays daily only at home and sometimes goes out with children. The patient’s parents live in West Java and her husband’s parents live in Singaraja. Lack of communication with husband causes frequent fights due to misunderstanding. Patient and family live separately from their extended families. The patient lives in a housing with a type 100 house obtained from the installments of the husband’s salary for 5 years ago. The housing is neat and clean but in the back area the housing area is still in the form of swampy land with water. Patient has a hobby of exercising in a residential area in the morning and evening.

FORMULATION OF THE PROBLEM

DHF is a disease characterized by sudden high fever symptoms of 2-7 days, accompanied by a reddish face. Complaints such as anorexia, headaches, muscle aches, bones, joints, nausea, and vomiting are also often found. Usually, there is also epigastric pain and tenderness under the ribs. The most common form of bleeding examination is the positive Tourniquet (Rumple Leede) test. Most cases of fine petechiae are found in the extremities, axillary, and mole palate. Epistaxis and gum bleeding are rare. The liver usually enlarges with variations from just palpable to 2-4 cm below the right arcus costae.1,2

The supporting laboratory results that are always found in DHF cases include thrombocytopenia, which is a decrease
in platelet count <100,000/μl found on days 3 to 7, and
occurs before or together with changes and increases in
hematocrit (hemoconcentration) values >20% of the
standard value. The number of leukocytes can decrease
(leukopenia). An increase in the concentration of IgG or
IgM antibody titers in serum is used for definitive
diagnosis of dengue fever.\textsuperscript{1}

The management and treatment of dengue virus infection
is divided into 4 parts, namely: (1) Suspected DHF; (2)
Dengue fever; (3) DHF degree I and II; and (4) DHF
degrees III and IV.\textsuperscript{2}

Recommended medications:
(1) Antipyretics can be given, and it is recommended that
paracetamol be given, not aspirin;
(2) Try not to give drugs that are not needed (for
example, antacids, antiemetics) to reduce the burden
of drug detoxification in the liver;
(3) Corticosteroids are given in DHF encephalopathy, but
if there are gastrointestinal bleeding corticosteroids
are not given; and
(4) Antibiotics are given for DHF encephalopathy.

Supportive care addresses the loss of plasma fluid as a
result of increased capillary permeability and bleeding.

DHF is an infectious disease that can cause an outbreak.
Therefore, if a DHF case is found, it must be reported in less
than 24 hours.3 Because the case finding from an early stage
is very important to overcome DHF outbreaks, therefore the
main concerns that need to be discussed include:

(1) What supporting examinations are valid for early
discovery of dengue cases?
(2) How effective are the roles of PSN (Pemberatasan
 Sarang Nyamuk/(Eliminate Mosquito Nesting Places)
and 3M (Menguras, Mengubur, Menutup)/(Drain, Bury,
Close) in preventing the spread of dengue cases?
(3) In addition to taking medicine, is there a diet or type
of food that can increase endurance and are planting
lemongrass and use of lavender leaves effective
enough to avoid mosquito bites?

**DISCUSSION**

Some problems faced by patients and families are the lack of
knowledge about how to prevent dengue, the causes of the
disease, and the consequences of this disease. Therefore, the
doctor together with the team should provide counseling to
patients and their families about the course of DHF and its
administration, so that patients can understand that there is no
medicine/medical treatment specifically for DHF, therapy is
only supportive and prevents worsening of the disease. The
patient will recover according to the natural course of the
disease. Lifestyle modifications with 3M activities can help
and patient can increase endurance by consuming nutritious
food and exercising regularly.4 Health care providers should
provide education related to the prevention of this disease by
maintaining variable humidity, which is an influential
environmental factor. While based on climatic factors,
control is done at the source of the disease, namely active
search for dengue cases at the source of the disease and
epidemiological

investigations by dengue surveillance officers. The second
control is the control of transmission/transmission media,
involving environmental management and vector control both
biologically and chemically in the larval phase until
adulthood. The third control is the control of the process of
exposure/contact to the community, namely the protection of
individuals from contact or bite of dengue-transmitting
mosquitoes, as well as community participation in vector
control such as 3M, and PSN, until confirmation of the
elimination of larvae by trained observers.\textsuperscript{5}

DHF is a disease that has the potential to cause outbreaks.
Therefore, preparation to face the KLB-DBD is important to
avoid any case increase. Follow-up efforts in the field are
very important to control dengue cases. Case management in
the field is as follows: *Puskesmas* that are in areas where
DHF patients who are hospitalized should receive reports of
DHF cases, then carry out epidemiological investigations and
control countermeasures to limit disease transmission: (1)
epidemiological investigations, including the search for
additional DHF patients/suspected DHF patients, and larvae
examinations at the patient’s home and 20 surrounding
homes. The purpose of the epidemiological investigation is to
find out whether or not there is a risk of further transmission;
(2) prevention of the focus in the field includes spraying
activities and fogging with focus areas if there is an
indication, that is cases are found with 1 or more other DHF
sufferers or 3 DHF suspects and larvae found in 5% of
houses/buildings inspected, DHF PSN together with the same
efforts coordinated by the head of the local village,
larvasidation (if needed), as well as counseling to the
community about the symptoms/early signs of DHF, in
addition to first aid by the community and DHF PSN.\textsuperscript{2}

Patients must also be given an understanding of the
consequences of this disease if not treated seriously which
will cause complications such as Dengue Shock Syndrome
(DSS), encephalopathy, kidney failure, and liver failure.\textsuperscript{4}

Efforts to dialogue with patients in this regard can be done
with the following 8 questions from Arthur Kleinman:6:

1. What do you think is the cause of DHF?
   Answer: “Dengue mosquito”.
2. When do you think this complaint started?
   Answer: “After being bitten by a mosquito”.
3. What are the consequences of this DHF, do you
   know? Answer: “It can cause death”.
4. In your opinion, is DHF easily curable or requires a
   long period of time?
   Answer: “It requires a long period of time”.
5. What kind of treatment do you expect?
   Answer: “Treatment that heals and is not very
   expensive”.
6. What results do you expect from the treatment?
   Answer: “Get back to feeling healthy”.
7. What are the main complaints from this DHF?
   Answer: “Dizziness, nausea, chills, and aching all
   over”.
8. What are you worried about, especially as a result of
   DHF?
   Answer: “Worried other family members affected by
this disease”.

By knowing the patient’s perceptions of the disease, the doctor will find out how much information and discussion should be given to the patient.

Knowledge, attitudes, and behavior of people about DHF is one of the crucial factors in preventing dengue virus infection\(^7,8\). Therefore, in addition to personal education by doctors, efforts to increase public knowledge need to be emphasized. Public education and early warning systems about DHF should be done more often, especially for communities in the DBD hotspot with low economic status and secondary level education\(^9,10\). To improve this education, health care workers must of course be given adequate provisions regarding DHF, prevention, and treatment. This is an important issue that should be noted because based on several studies, education about infectious diseases including DHF cannot run optimally because health care workers do not have enough knowledge and need to be given further training in educational materials\(^11\).

REFERENCES