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Case Report: Dengue Hemorrhagic Fever in Children

Maria Wahyu Daruki[1]

[1] Primary Health Care Center (*Puskesmas*) Banjarangkan II; Indonesia
Training Participant of Primary Care Doctors Preceptors - Ministry of Health Republic of Indonesia 2017

Corresponding Author:
Maria Wahyu Daruki: Primary Health Care Center (*Puskesmas*) Banjarangkan II, Takmung, Banjarangkan, Klungkung, Bali – 80752, Indonesia
E-mail: dr_lea_dps@yahoo.com

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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, joints ache and feeling she just wanted to stay alone. 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 and at that time obtained laboratory results of 138,000/µl platelet count, hematocrit 46.7% and leukocyte rate 3,200/ mm_3. 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/mm_3. 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)[2]. An increase in the concentration of IgG or IgM antibody titers in serum is used for definitive diagnosis of dengue fever[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[3].

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[2]. 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[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[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[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].

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