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Accuracy of diagnostic codes for Dengue Hemorrhagic Fever patients based on anamnesis and supporting examinations in 10 Central Java Hospitals

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Abstract— Dengue Hemorrhagic Fever (DHF) often occurs every year and attacks all age groups and is related to community habits and environmental factors. However, there are incomplete forms and some codes that are not yet appropriate. This study aims to determine the accuracy of the Dengue Hemorrhagic Fever disease code in 9 hospitals in Central Java. This study is descriptive with a case study approach. The data collection method uses an observation sheet to observe 1653 Medical Record Documents. The results showed that Dengue Fever patients The main complaint in DHF patients was fever 1653 (100%) and other complaints such as: vomiting, shock, heartburn, nosebleeds and petechia. Most patients experienced a decrease in platelets <150.00 1448 (87.6%), a decrease in leukocytes <5000 there were 254 (15.4%). Most with the main diagnosis were DHF 1526 (92.3%). most of the primary diagnosis codes are A91 there are 1526 (92.3) medical record documents. Accurate codes are 1529 (92.5%), while inaccurate data are 124 (7.5%).. Suggestions in this study, Hospitals should complete all patient information and physical examination results or supporting, especially the number of platelets that affect the decision on diagnosis and primary codes.
Keywords— Supporting Examinations, Dengue Hemorrhagic Fever, Diagnosis

I. INTRODUCTION

Dengue Hemorrhagic Fever (DHF) is a disease caused by the dengue virus which is included in the Arthropod-Borne virus group, included in the genus Flavivirus, and the Flaviviridae family. Dengue Hemorrhagic Fever can be transmitted through the bite of the Aedes albopictus or Aedes aegypti mosquito. The Aedes albopictus and Aedes aegypti mosquitoes can be transmitted through Aedes polynesiensis and several other mosquito species that are active and bite during the day. Dengue Hemorrhagic Fever (DHF) often occurs every year and attacks all age groups. Dengue Hemorrhagic Fever (DHF) is related to community habits and environmental factors. (1)

DHF is one of the symptomatic manifestations, namely a disease that causes a symptom. The infection of the dengue virus that attacks all age groups results in hospitalization of patients and is the main factor in death in children. Because the body in children is less able to compensate for capillary leakage compared to adults. The risk caused is dengue shock which can lead to death. The main pathological changes in DHF are divided into two. First, increased capillary permeability which results in loss of plasma volume in blood vessels 2 so that hemoconcentration occurs. For other signs, namely shock, and decreased blood, in shock, increased hematocrit levels often occur, so in DHF, hematocrit levels must be checked frequently. Furthermore, hemostasis disorders caused by thrombocytopenia, coagulopathy, and vasculopathy. In DHF, thrombocytopenia appears on the third day and throughout the disease. Disorders of hemostasis are such as bleeding gums. (2)

The Dangue virus can spread in tropical areas through the rainy season, temperature and urbanization. The signs of DHF are sudden fever for about 2 to 7 days without any definite cause, nausea, anxiety, weakness, reddish spots on the skin, sometimes nosebleeds, decreased appetite. This virus has four serotypes, including DEN-1, DEN-2, DEN-3, and DEN4. In these four types, the symptoms caused are different, but the most serious infection in Indonesia is DEN-3. Dengue Hemorrhagic Fever (DHF) is included in the Arthropod disease group, because this disease is not transmitted through direct contact between humans, because this disease can only be transmitted through mosquito bites. (3) WHO divides several classifications of DHF into several parts, namely, grade 1 dengue fever, fever accompanied by unclear symptoms and the only manifestation. Grade 2 dengue fever, Symptoms at grade 1 and spontaneous bleeding, bleeding occurs on the skin. Grade 3 dengue fever, symptoms at grades 1 and 2 then circulatory failure occurs, weak pulse, hypotension, skin becomes moist and cold accompanied by restlessness. Grade 4 dengue fever, shock with irregular pulse and blood pressure. (4)

In the ICD 10 book, cases of Dengue Fever are included in block A with codes between A90-A99, including in the category of infections and parasites. Based on the Minister of Health Regulation Number 377/Menkes/SK/III/2007 concerning the professional standards of medical recorders and health information, it explains that one of the competencies of medical recorders is the classification and codification of diseases, problems related to health and medical actions. (5)

In 2022, the Ministry of Health noted that the number of DHF cases in Indonesia was reported at 131,265 cases, for the number of deaths due to DHF reaching 1,135 cases. (6)

Based on the results of an initial survey at a Hospital in Central Java, most patients with a diagnosis of . Based on the background above, this study was conducted to determine the accuracy of the diagnosis code for Dengue Fever patients based on anamnesis and supporting examinations at 10 Hospitals in Central Java.

II. METHOD

The type of research used is descriptive, which presents a complete picture of the accuracy of the code and supporting information of patients including: anamnesis, and supporting examinations of Dengue Fever patients. This study uses a case study approach with a data collection method using observation sheets by observing objects in the form of Medical Record Documents of Dengue Fever patients in 10 Private Hospitals in Central Java totaling 1653. The data will be processed and presented descriptively.

III. RESULTS AND DISCUSSION

Anamnesis

Table 1. Most Common Symtom of Dengue Fever Patients

No	Symtom	Amount	%
1	Fever	1653	100
2	Vomiting	317	19,2
3	Shock	62	3,8
4	Heartburn	53	3,2
5	Nosebleeds	37	2,2
6	Petecie	23	1,4
	Total	1653	100

Based on table 1. The main complaint that is always present in DHF patients is fever 1653 (100%) and other complaints such as: vomiting, shock, heartburn, nosebleeds and petechiae.

This is in accordance with research. Zulfikar Ahmad's research states that all dengue fever sufferers experience symptoms of fever. This is because there are other factors that can trigger a person's immune system. Fever is a common clinical symptom found in all cases of dengue fever and is also one of the diagnostic criteria for dengue fever set by WHO (7). This can occur due to rupture of superficial blood vessels in the nasal cavity caused by increased body heat. While patients who experienced a reddish rash in DHF patients at Tugurejo Hospital were only 4 patients from a total sample of 83 patients, so it is very small and almost rarely found.

Nosebleeds during dengue fever are not dangerous. This can occur due to rupture of superficial blood vessels in the nasal cavity caused by increased body heat. In the study of Efrans Caesar, it was stated that DBD is characterized by symptoms of fever for 2-7 days, bleeding, such as nosebleeds, red spots on the body, bleeding gums, decreased platelets, the presence of hemoconcentration in the form of plasma leakage with signs such as increased hematocrit, ascites, pleural effusion (8). Andi Nurul Khadijah and I Made Gede Dwi Lingga Utama explained that 24 people had symptoms of fever, 14 people complained of vomiting, 13 people complained of abdominal pain, 13 people complained of nausea, and 9 people complained of decreased appetite and drinking. (8)

Supporting Examination

Table 2. Supporting Examination of Dengue Fever Patients

No	Supporting Examination	Amount	%
Pletelets			
1	<150.000	1448	87,6
2	150.000 – 400.00	202	12,2
3	> 400.000	3	0,2
	Total	1653	100
	Leucocytes		
1	< 5000	254	15,4
	Total	1653	100
Hemoglobin mmHg			
1	< 13	78	4,7
2	Total	1653	100

Based on table 2, it was found that most patients experienced a decrease in platelets <150,000 1448 (87.6%), a decrease in leukocytes <5000 there were 254 (15.4%)

This study is in accordance with the study of Thrombocytopenia which can usually be found between the third and seventh days of illness. The same thing was stated by Fitriyah Handayani, Sulistiana that the examination of patient blood samples showed that the number of platelets was low. (9) Low platelets due to virus suppression in the bone marrow, destruction of platelets in the periphery, and consumption of platelets in the blood vessels. (3). In a study conducted by Arief, Rismawati, Arina, there were 138 people (100%) who had abnormal levels of <150,000, while in the hematocrit examination, the most with normal hematocrit levels were men 40-48 and women 37-43 as many as 75 people (54.4%). (10)

Main Diagnosis of Dengue Fever Patients

Table 3. Table of Main Diagnosis of Dengue Fever Patients

DHF		DF		Total	
Amount	%	Amount	%	Amount	%
1526	92,3	127	7,7	1653	100

Based on table 3, it was found that the majority of patients with the main diagnosis were DHF 1526 (92.3%) medical record documents. Determination of the main diagnosis is based on the patient's main complaint, physical examination and supporting examination.

Patient's Main Diagnosis Code

Table 4. Patient's Main Diagnosis Code

A91		A90		Total	
Amount	%	Amount	%	Amount	%
1526	92,3	127	7,7	1653	100

Based on table 4, most of the primary diagnosis codes are A91, there are 1526 (92.3) medical record documents, this study is in line with the research This study is in line with the research of Ayu Islammia D putri, Rumana NA, Indawati L, Dewi DR conducted at UKI General Hospital in 2020 stating that the ICD-10 code for dengue fever patients from 94 medical records still uses the code A91 (3).

This is different from the results of the study by Diah Putri Ayu Islammia, et al., that the most patients received the code A97.0, which means that the most patients had a primary diagnosis of Dengue without warning signs with a percentage of 100% (3).

The accuracy of the main diagnosis code for DHF patients is

Table 5. Patient's Main Diagnosis Code

A91				A90				Information
Accurate		Not Accurate		Accurate		Total		
Amount	%	Amount	%	Amount	%	Amount	%	
1402	84,8	124	7,5	127	7,7	1653	100	Patients with platelet count >150,000 in code A91

Based on table 5, accurate data was obtained 1529 (92.5%), while inaccurate data There were 124 (7.5%). The cause of inaccurate data was in the results of laboratory examinations platelets that were more than 150,000 were coded A91, even though it should be A90, this is in accordance with Dengue Fever differences were also found that could cause a diagnosis code for Dengue Fever (A90) which did not find a decrease in platelets but epistaxis could still occur and a diagnosis of Dengue Hemorrhagic Fever (A91) was found which contained bleeding, decreased platelets and hemoglobin, shock, and so on (11).

IV. CONCLUSIONS AND SUGGESTIONS

The main complaint in DHF patients is fever 1653 (100%) and other complaints such as: vomiting, shock, heartburn, nosebleeds and petechiae. Most patients experienced a decrease in platelets <150.00 1448 (87.6%), a decrease in leukocytes <5000 there are 254 (15.4%). Most of the main diagnosis is DHF 1526 (92.3%). most of the main diagnosis codes are A91 there are 1526 (92.3) medical record documents. Accurate codes 1529 (92.5%), while inaccurate data There are 124 (7.5%). When determining the code for Dengue Hemorrhagic Fever disease in addition to looking at supporting information anamnesis, physical examination and supporting examination of the number of platelets.

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