Acute Pancreatitis in Dengue Hemorrhagic Fever

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ABSTRACT

We reported a case of acute pancreatitis as the complication of dengue hemorrhagic fever (DHF). This complication can cause more severe fatal condition, and difficulties in treatment, although it is rare. Dengue hemorrhagic fever (DHF) is one of the endemic diseases and often come as an outbreak event in South East Asia including Indonesia. Dengue hemorrhagic fever (DHF) is a global public health problem, because until now there has been no medicine to eradicate the dengue virus, no dengue vaccine and difficult to eradicate the mosquitoes as the contagious vector. Diagnosis and treatment of acute pancreatitis as early as possible is important to improve the patient’s condition and survival. The patient was a 59 year old male and had been treated conservatively. The patient was admitted to the hospital, oral fasting until the fourth day, given parenteral nutrition, antibiotic and other intravenous medicines. Initial oral liquid diet was given on the fifth day of hospitalization and changed gradually according to the condition. The patient was then improved and discharged from the hospital.

Key words: acute pancreatitis, dengue hemorrhagic fever, complication.

INTRODUCTION

Dengue hemorrhagic fever (DHF) is one of the endemic diseases and often comes as an outbreak event in South East Asia including Indonesia. The dengue hemorrhagic fever (DHF) is a global public health problem, because until now there has been no medicine to eradicate the dengue virus, no dengue vaccine and difficult to eradicate the mosquito as the contagious vector. Until now 4 serotypes of Dengue virus have been documented i.e. DEN-1, DEN-2, DEN-3 and DEN-4. The incidence of DHF in Indonesia in the year 2001 was 17.2/100,000 people and in the year 2004 27.8/100,000 people. The case fatality rate (CFR) in the year 2004 was around 1.1%. Indonesia as one of the developing countries is still lack of funds and facilities to cut the contagious
chain of dengue fever/dengue hemorrhagic fever. Dengue infection or dengue hemorrhagic fever has a lot of complications i.e. acute organ bleeding, shock(DSS), acute hepatitis, acalculous cholecystitis, acute pancreatitis, gastritis, enteritis etc.3-6,10-18

Dengue hemorrhagic fever has the risk to cause severe or fatal disease, especially in dengue shock syndrome stage. Acute pancreatitis itself can also cause severe-fatel diseases like septic shock etc. According to those reasons, the acute pancreatitis complication can cause more severe condition in dengue hemorrhagic disease. This report is made to demonstrate acute pancreatitis as one of the complications of dengue hemorrhagic fever.

**CASE ILLUSTRATION**

A 59 year old male patient came to the emergency ward of one private hospital with chief complaint of epigastric pain and abdominal bloating since 1 day before admission. Since 4 days before the patient had been complaining of high fever, malaise, bodyache and headache. The patient went to a doctor and got antibiotic and antipyretic, but there was no improvement. Since 1 day before admission the patient had been complaining of epigastric pain, bloating, nausea and vomiting. The patient also complained of difficulty in defication and abdominal bloating.

Physical examination showed that the general appearances were moderately ill, consciousness alert, blood pressure 130/80 mmHg, heart rate=pulse=100/m, temperature 39°C and respiration rate 20x/m. Heart and lung within normal limit. The abdomen was bloating, meteoristic, bowel sound +, epigastric pain (+). Extremities within normal limit.

Laboratory: hemoglobin 13g%, leukocyte 13,200/mm³, hematocrit 56 vol%, thrombocyte 120,000/mm³, AST 80 U/l, ALT 90 U/l, amylase 654 U/l, lipase 780 U/l. Ureum 50 mg/dl, creatinine 1.6 mg/dl, IgM dengue (+), IgG dengue (+).

Ultrasound examination on the 1st day of admission showed mild to moderate fatty liver, normal gall bladder and spleen, normal pancreas and kidney, and there were minimal ascites within the area of spleen. ([Figure 1 and 2](#))

Problems of this patient were acute pancreatitis, dengue hemorrhagic fever (DHF) and renal insufficiency.

The management for the patient were oral fasting, nasogastic tube placement to collect the gastric secretion every 24 hours, total parenteral nutrition: Ringer lactate infusion + Trifusin E 1000 infusion + Aminosteril 10% in 24 hours, and antibiotic: Ceftriaxone 2 x 1 gr/day.

On the 2nd day of admission: The general appearances of the patient were moderately ill, consciousness alert (compos mentis), blood pressure 120/70 mmHg, heart rate=pulse= 102/m, temperature 37.8°C, and respiration rate 20/m. The abdomen was still bloating, meteoristic (+) and the bowel sound was weak. Laboratory: hemoglobin 12 g%, leukocyte 11,200/mm³, hematocrit 56 vol%, thrombocyte 40,000/mm³.

Abdominal CT-scan showed fatty liver, no tumor, the pancreas was prominent and enlarged showed pancreatitis, no tumor. The common bile duct was not enlarged. There were still minimal ascites perisplenic. Right and left pleural effusion was positive. There was no lymph node enlargement.
On the 5th day of admission: Initial oral liquid diet was given and changed gradually according to the condition.

On the 6th day of admission: The General appearances of the patient were moderately ill, better, consciousness alert (compos mentis), blood pressure 130/80 mmHg, heart rate=99/m, temperature 37°C, and respiration rate 18/m. The abdomen was not bloating, meteoristic+, and the bowel sound was normal. The laboratory showed hemoglobin 13g%, leukocyte 8800/mm³, hematocrit 48 vol%, and thrombocyte 74,000/mm³.

Repeated ultrasonography showed fatty Liver, acute pancreatitis still positive, minimal ascites around the spleen and left pleural effusion still positive.

On the 10th day of admission: The general appearances of the patient were mildly ill, better, consciousness alert, blood pressure 120/80 mmHg, heart rate=82/m, temperature 36.8°C, and respiration rate 18/m. The abdomen was normal, no more meteorismus and the bowel sound was normal. Laboratory findings showed hemoglobin 12.8 g%, leukocyte 8200/mm³, hematocrit 46 vol%, thrombocyte 99,000/mm³, serum amylase 48 U/l and serum lipase 66 U/l.

Repeated ultrasound result compared to the last ultrasound examination showed improvement, no ascites, minimal left pleural effusion, and the other organs within normal limit. (Figure 3)

![Figure 3. Ultrasonographic picture of the pancreas on day-10th admission](image)

On the 11th day of admission the patient was discharged from the hospital.

**DISCUSSION**

South East Asia including Indonesia, is the place where Dengue hemorrhagic fever is still prevalent and endemic. Sometimes there is an outbreak of Dengue hemorrhagic fever and this condition needs good management including prevention and treatment.1,2,7,19,20 This Dengue Hemorrhagic Fever is caused by Dengue virus infection which transmitted by specific mosquito such as Aedes aegypti or Aedes albopictus.

Basically we know that dengue virus infection can cause complications such as acute pancreatitis and other abdominal abnormalities.3,4,6,8,9,13-18 In this case report we have already shown that the acute pancreatitis complication occurs in dengue hemorrhagic fever. The dengue hemorrhagic fever diagnosis was made according to the WHO criteria, fever 3-5 days, bleeding tendencies, thrombocytopenia below 100,000/mm³, with positive IgM Dengue result. Acute pancreatitis diagnosis was made upon the clinical symptoms, epigastric pain, vomiting, fever, bloating, epigastric tenderness, enlargement of the pancreas on ultrasound examination without hepatobiliary disorders, increased serum amylase-lipase 3x normal.

Frequently the acute pancreatitis complication is underdiagnosed due to the lack of awareness about the complications of dengue hemorrhagic fever or dengue virus infection. We knew that not all of the dengue fever cases will get acute pancreatitis complication, so it is unusual to check pancreatic function test such as serum amylase-lipase. Because there is a risk to develop acute pancreatitis complication every doctor must be aware of this DHF’s complication. If the medical doctors do not diagnose the pancreatic complication as early as possible, the patient will have more severe and fatal condition.3,7,9 This acute pancreatitis might increase the severity of dengue virus infection.

Mild renal insufficiency that occurred in the patient was caused by dehydration. The renal insufficiency was then improved after rehydration and patient’s improvement.

The ascites that occurred in this patient were caused by fluid extravasation from intravascular to extravascular due to Dengue virus infection or could be caused by the acute pancreatitis. When the Dengue Hemorrhagic Fever improved, the fluid extravasation process stopped and then the ascites also disappeared.1,7,9,12,18,20 If the ascites were caused by the acute pancreatitis, and if the pancreatic inflammation improved, the ascites will also dissappear.5,10,16,21,22
The ultrasonography examination on day 1 admission could only detect abdominal ascites, but could not detect the pancreatic enlargement and inflammation. This result was in line with literature and studies which showed that ultrasonography examination on acute pancreatitis frequently will have normal pancreas result. Ascites found in ultrasonography examination could be the specific sign in Dengue hemorrhagic fever or could be the sign of acute pancreatitis. This finding is in line with literature and study that reported that ascites can be found in patients with Dengue hemorrhagic fever or acute pancreatitis.

In this case, the inflammation of the pancreas was very active so we gave total parenteral nutrition with optimum fluid-electrolyte to prevent the intravascular plasma leakage. The fluid-electrolyte and nutrition treatment of these patients were given according to the requirement, underlying disease and body weight. Every day the patient must be monitored and followed up regularly to know the effects or side effects of the fluid-electrolyte-nutrition treatment. From many studies it was shown that enteral nutrition via nasojejunal tube is better than total parenteral nutrition. In our patients in Indonesia, we have not done the enteral nutrition with nasojejunal tube due to lack of facilities. We do not have the nasojejunal tube available in the market in Indonesia, so we still use total parenteral nutrition in 5-7 days of acute pancreatitis then we change gradually to enteral nutrition or oral nutrition when the pancreatic function is normal.

Antibiotic is given in both of the patients above to prevent secondary bacterial infection due to intestinal bacterial translocation. In the second case, the antibiotic is given also for the indication of pneumonia. This antibiotic therapy is given in line with the treatment recommendation for acute pancreatitis, although in our patients the cause of acute pancreatitis is dengue virus.

The length of stay for this case was 11 days. The length of stay for this case is longer than the general length of stay for acute pancreatitis or dengue hemorrhagic fever cases. The length of stay for mild acute pancreatitis according to literatures is between 5-7 days. The length of stay of Dengue hemorrhagic fever usually also need 5-7 days. The length of stay is varied according to the disease severity. Logically, if there are 2 diseases in one patient, the length of stay for the patient will be longer than for one disease only.

REFERENCES