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Case Report

Diagnosis and management approach of acute cholangitis with sepsis complications in a peripheral hospital: a case report

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ABSTRACT

Acute cholangitis is a systemic, life-threatening condition that develops as a result of obstruction and infection of the bile ducts. The two main processes leading to acute cholangitis include obstruction of the biliary tract and the growth of bacteria in the bile. A case of acute cholangitis has been reported at Rote Ndao public hospital, Rote Ndao district, East Nusa Tenggara, in a 57-year-old woman, with the main complaint of right upper abdominal pain, jaundice, and fever. The diagnostic approach is based on anamnesis, physical examination, and supporting examinations. Based on the Tokyo guideline 2018 (TG18) the patient met a suspected diagnosis, with A criteria that was evidence of systemic inflammation in the form of fever (body temperature 38.7° C), evidence of an inflammatory response with increasing leukocyte count (26,200/cm^3), and for the B criteria that was evidence of cholestasis in the form of jaundice, increasing of total bilirubin (19.8 mg/dL), abnormal liver function tests (SGOT 135 IU/L, SGPT 74 IU/L), while C criteria cannot be performed due to limited hospital imaging facilities. Limitations of investigations should not limit the diagnosis and initial management so it can give the good prognosis. Even though there were complications of sepsis, the patient did not experience signs of shock which could lead to mortality.

Keywords: Acute cholangitis, Sepsis, Tokyo guidelines, TG18

INTRODUCTION

Acute cholangitis is a systemic, life-threatening condition that develops because of obstruction and infection of the bile ducts. Biliary duct obstruction and bacterial growth in the bile are the two main processes that cause acute cholangitis. The most common cause of biliary obstruction is choledocholithiasis.[1] The prevalence of gallstones in the world is around 20-35% and the risk of symptomatic acute cholangitis is reported to be around 0.2%.[2] The definitive diagnostic criteria for clinically acute cholangitis is Charcot's triad consisting of the symptoms of fever (which may be accompanied by shivering), abdominal pain, and jaundice. Meanwhile, Reynold's Pentad describes a more severe condition, namely Charcot's triad which is accompanied by symptoms of septic shock and decreased consciousness.[3] Management of acute cholangitis consists of administering antibiotics and surgery (bile drainage).[4] Sepsis is one of the potential complications of cholangitis and is a life-threatening condition.[5] Therefore, acute cholangitis must be detected early so that it receives appropriate treatment and does not cause septic shock which can lead to mortality.

CASE REPORT

A woman, 57 years old, a housewife, came to the emergency room at Rote Ndao public hospital, Rote Ndao district with the main complaint of upper right abdominal pain for about 2 weeks before entering the hospital. The pain comes and goes, it is not aggravated by physical activity and has persisted for the last few days. The patient also complained of fluctuating fever since 1 last month, jaundice since about 2 last weeks, heartburn, nausea and

vomiting about 5 times a day, and weight loss of about 7 kgs in the last 1 month.

Significant physical examination included axillary temperature was 38.7ºC, and icteric sclera (Figure 1), on abdominal examination, it looked distended, there was tenderness pain in the upper right abdomen, extremities looked yellow, felt warm, no edema, and no rash or petechiae.

Figure 1: Icteric sclera and jaundice in skin face.

Laboratory examination showed complete blood count as follows: leukocytes 26,200/ul; red blood cells 2.79 million/ul; hemoglobin 7 g/dL; MCH 25.1 pg; MCV 63.9 fl; MCHC 39.3 g/dL; hematocrit 17.8%; platelets 156,000/uL; liver function SGOT 135 IU/L, SGPT 74 IU/L, direct bilirubin 9.8 mg/dL; indirect bilirubin 10.0 mg/dL; total bilirubin 19.8 mg/dl; total cholesterol 113 mg/dL; BUN 18 mg/dL; creatinine 0.5 mg/dL; non-reactive. HbsAg. Urinalysis examination results showed: leukocyte urine chemistry 3+; nitrite +; urobilinogen 2+ (70); proteins 2+; pH 6.0; blood +; specific gravity 1.020; ketones 1+, bilirubin 3+, glucose 1+, erythrocyte sediment 3+; leukocyte sediment 3+.

Based on the results of anamnesis, physical examination, and supporting examinations, a diagnosis was made; Sepsis et causa suspected acute cholangitis. Patients were given Ringer lactate infusion therapy 1500 cc for 24 hours, omeprazole 20 mg intravenously every 12 hours, ciprofloxacin 200 mg intravenously every 12 hours, metronidazole 500 mg intravenously every 8 hours, and paracetamol 500 mg intravenously if fever every 6 hours.

After undergoing treatment for 7 days, the patient was getting better with stable hemodynamics, free of fever for more than 24 hours, and reduced clinical jaundice compared to the initial admission to the hospital.

DISCUSSION

The diagnosis and management approach of patients who come to peripheral hospitals such as at the Rote Ndao public hospital, East Nusa Tenggara, needs more emphasis on anamnesis, physical examination, and basic supporting examinations, with the limited imaging modalities.

Based on the Tokyo guideline 2018 (TG18) the diagnostic criteria for acute cholangitis are as follows:[6]

Systemic inflammation: A-1: fever (body temperature >38°C and/or chills. A- 2: laboratory data: evidence of inflammatory response - total leukocyte cells (WBC) <4,000/cm3 or >10,000/cm3, CRP ≥1 mg/dL,

Cholestasis: B-1: Jaundice-total bilirubin≥12 mg/dL; B-2: laboratory data: abnormal liver function tests. Alkaline phosphatase (IU) >1.5× the upper limit of normal; gamma GT (IU) >1.5× upper limit of normal; aspartate aminotransferase (IU) >1.5× the upper limit of normal; alanine amino-transferase (IU) >1.5× the upper limit of normal,

Imaging: C-1: biliary dilation and C-2: imaging evidence of etiology (stricture, stone, etc.).

The diagnosis is suspected if there is one criterion in A and one criterion in B or C, while a definitive diagnosis is if one criterion is found in A, one criterion in B, and one criterion in C. In this case, the patient meets the suspected diagnosis, namely the appropriate criteria A is the presence of evidence of systemic inflammation in the form of fever (body temperature 38.7º C), evidence of an inflammatory response in the form of leukocyte count 26,200/cm^3, suitable B criteria is evidence of cholestasis in the form of jaundice, total bilirubin 19.8 mg/dL, abnormal liver function tests (SGOT 135 IU/L, SGPT 74 IU/L), while C criteria cannot be performed due to limited hospital imaging facilities.

The initial management of patients with acute cholangitis is aggressive hydration as soon as venous access is obtained to correct fluid loss and normalize blood pressure. The principle of management of acute cholangitis consists of administering antibiotics and biliary drainage.[7,8] Empiric antibiotics must cover gram-negative and anaerobic bacteria. 3 In this case, the patient is given Ringer Lactate infusion therapy 1500 cc per 24 hours, ciprofloxacin 200 mg intravenously every 12 hours, antibiotics Metronidazole 500 mg intravenously every 8 hours, omeprazole 20 mg every 12 hours, and paracetamol 500 mg for fever every 6-8 hours.

The mortality and morbidity of acute cholangitis increase if appropriate and rapid treatment is not received. Mortality has been reported to be as high as 88% in untreated cholangitis.[9] In this case, limited imaging modalities in a peripheral hospital did not hinder the initial management of the patient. The diagnostic approach is prioritized through clinical manifestations and basic

laboratory examinations. The patient in this case experienced an improvement in his clinical condition after undergoing treatment for 7 days.

CONCLUSION

Diagnostic approach of acute cholangitis complicated by sepsis is based on anamnesis, physical examination and supporting examinations. We use the Tokyo guidelines 2018 (TG18) as an initial diagnostic tool. The treatment given aims to maintain hemodynamics and prevent the spread of infection. Limited resources in peripheral areas should not limit the initial management of acute cholangitis, so it can give the good prognosis.

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