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Case Report

Pediatric Hepatitis A: A Case Report

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Abstract:

Background: Hepatitis A is a systemic infection which predominantly inflame the liver due to Hepatitis-A-Virus (HAV) infection. Developing countries have higher prevalence of this disease because of poor sanitation and environment. The transmission of HAV is fecal-oral via contaminated foods or beverages.

Case: A 14-year-old boy visited emergency department with yellowish skin on body, nausea, fever, and liver enlargement. He had a bad habit of consuming unhealthy street-foods. Hepatitis A was diagnosed after history taking, physical examination and laboratory testing. Serology test was performed with positive Anti HAV IgM to confirm the disease. Liver enzymes, and bilirubin level were also increased in this patient.

Discussion: The transmission of HAV is through fecal-oral via contaminated foods or beverages. This disease can be prevented by having good personal hygiene, avoiding contaminated food, with good access to clean water and environmental sanitation. Habit of consuming street foods is a risk factor of developing HAV infection. The clinical manifestation of HAV infection includes jaundice, nausea, decreased appetite, and vomiting.

Conclusion: Diagnosis of hepatitis A requires careful history taking, physical examination and laboratory evaluation. Hepatitis A is a self-limiting disease and currently there is no specific treatment to cure this disease. Supportive treatment, hepato-protector and vitamin supplementation will improve the condition.

Keywords: children, hepatitis A, jaundice

Introduction

Hepatitis A is a systemic infection which predominantly inflame the liver due to Hepatitis-A Virus (HAV) infection. HAV infection occur globally with higher prevalence in developing countries which are associated with poor environmental condition.[1] Data from World Health Organization (WHO) in 2011 showed that Indonesia is one of the countries with high hepatitis A prevalence. In Aceh Province, subdistrict with the highest prevalence of hepatitis A is North Aceh (3,6%) compared to whole Aceh Province itself (1,4%).[2]

HAV is transmitted via fecal-oral transmission which means that people can get infected when consuming fecal-contaminated food or beverages. The clinical manifestations arise abruptly according to the phases of the infection, which are prodromal phase, icteric and convalescence. However, in some cases, HAV infection proven which is proven by serology test can be asymptomatic or with minimal symptoms without jaundice which is known as anicteric hepatitis A. The tendency of developing this condition is higher in children.[3] In this study, we aimed to present a case about pediatric hepatitis A on a 14-year-old boy.

Case

A 14-year-old boy was presented to emergency department in Zainoel Abidin General Hospital with the chief complaint of yellowish skin on face, body and extremities that occurred in the past 3 days before admission. The jaundice was progressive until one day before admission. There was history of intermittent fever in the last two days which improved after consuming antipyretic. He also complained of fatigue, intermittent right hypochondriac abdominal pain, decreased appetite, nausea, and also 2-3 times vomiting per day with around 100 cc volume each time. His urine was dark yellow with normal color of feces. He was a student in a boarding school and one of his friends had similar complaint. He also consumed lots of unhealthy street-foods.

Upon evaluation, patient was compos mentis with normal vital sign. The anthropometry measurement showed that he suffered from malnutrition (current body weight/ideal body weight 72.3%). Jaundice was present throughout the body including the sclera. Abdominal examination also showed that jaundice was also present on the abdomen without any distention. There was a right hypochondriac abdominal pain and the liver is palpated 2 cm below the costal arc. Laboratory tests showed that hemoglobin 10.8 g/dL, hematocrits 33%, leucocytes 6.2 x 10^3 cells/mm^3, SGOT (AST) 129 U/I, SGPT (ALT) 110 U/I, total bilirubin 6.96 mg/dL, direct bilirubin 4.98 mg/dL, and indirect bilirubin 1.98 mg/dL. Immuno-serology test also revealed reactive Anti-HAV IgM which confirmed the disease.

Patient was treated supportively including bed rest, diet with soft consistency, domperidone every 8 hours, curcuma every 24 hours, Vitamin E 200 IU every 24 hours, Vitamin K 10 mg every 24 hours, multivitamin supplement, and Vitamin D every 24 hours. After receiving treatments, all symptoms including jaundice progressively improved.

Discussion

Hepatitis A is a systemic infection which predominantly affect the liver because of HAV infection. A majority of HAV infection occurred in early life without symptoms and jaundice. The transmission of this disease is through fecal-oral via contaminated foods or beverages. This disease can be prevented by practicing good personal hygiene, avoiding contaminated food, as also good access to clean water and better environmental sanitation. Habit of consuming street foods is a known risk factor of developing HAV infection.[3]

The clinical manifestation of HAV infection includes systemic jaundice, nausea, decreased appetite, and vomiting approximately 2-3 times per day. Based on the pathophysiology, HAV enters human's gastrointestinal tract to the vena porta and later invades liver parenchymal tissue. Virus replicates in the hepatic cells causing damage to the parenchymal tissue. Then, virus will continuously migrate and invade another liver parenchymal cells or enter the biliary duct to be excreted through feces. Damaged liver parenchymal cells will stimulate inflammation reaction characterized by macrophage aggregation as well as Kupffer cell enlargement which may obstruct the flow of conjugated bilirubin and also reduce bilirubin excretion to the intestine. This condition will lead to the imbalance of bilirubin production and excretion from the liver which consequently causes conjugated bilirubin to be accumulated inside the liver and reflux to the intravascular. This pathophysiology is manifested as jaundice on the skin especially the sclera as well as itchiness due to deposit of bile salts on the skin tissue. Lack of conjugated bilirubin in the intestinal tract causes reduced bile acids which leads to fat metabolism disorder. Prolonged fat storage in the stomach stimulates sympathetic and parasympathetic nerve to activate the medulla oblongata and triggers the sensation of nausea, vomiting and decreased appetite.[4] The damage of liver cells during viral replication process will cause high liver enzyme concentration which can be measured as increased level of SGOT (AST) and SGPT (ALT).

In this case, liver is palpated approximately 2 cm below the costal arc. Hepatomegaly is caused by replication of HAV inside the hepatocyte. Immune system will be activated to produce specific reaction to fight and eradicate those infectious agents. Consequently, liver will be inflamed and enlarged.[5] There is no specific treatment for hepatitis A as this is a self-limiting disease. Bed rest is highly suggested combined with other supportive treatments. Intravenous treatment may be required in case of

persistent vomiting in children. Patients have to avoid alcoholic and hepatotoxic drug consumption.

Rhizoma curcuma tablet is beneficial as additional supplement in improving liver function as well as restoring appetite. Hartono mentioned that the use of 5-10 mg/kg/day dosage is proven to give hepatoprotection and repair damaged liver cells. This supplement is available in tablet-shaped containing 200 mg of curcuma. The use of hepato-protector will only reduce the symptoms and not cure the disease.[6] Vitamin combined with high protein and high calories food have to be given for patients suffering from malnutrition. Specific diet and vitamin are aimed to achieve and maintain optimal nutrition without increasing liver load.[7]

Conclusion

Hepatitis A is a systemic infection which predominantly inflame the liver due to Hepatitis-A-Virus (HAV) infection. The diagnosis is made after careful history taking, physical examination and laboratory evaluation. In this study, we presented a case of 14-year-old boy who visited the emergency department with yellowish skin on body, nausea, fever, and liver enlargement. He had a bad habit, consuming unhealthy street-foods. Hepatitis A was diagnosed after examination. The clinical manifestation of this disease depends on which phases the patient is currently in. Serology test was performed to detect the presence of Anti HAV IgM to confirm the disease. Laboratory test with high ALT/AST and bilirubin indicated the presence of damage of liver cells. Hepatitis A is a self-limiting disease, hence, there is no specific treatment to cure this disease. Supportive treatment, consuming hepato-protector and vitamin supplementation will improve the condition.

Conflict of Interest

None declared.

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