ETIOLOGY AND CLINICAL CHARACTERISTICS OF ACUTE CYTOMEGALOVIRUS HEPATITIS IN CHILDREN AT NATIONAL CHILDREN’S HOSPITAL

Nguyen Van Lam¹, Vo Manh Hung ², Nguyen Phuong Thao¹, Pham Nhat An ¹

ABSTRACT

Aim: study of clinical and investigation characteristics of acute CMV hepatitis in children at the National Children’s Hospital.

Subjects and Methods study: Prospective descriptive study on 42 patients were diagnosed acute CMV hepatitis at the National Children’s Hospital from 10/2015 to 9/2016

Result: In 57 cases were identified acute viral hepatitis, the prevalence of CMV hepatitis is 73% (42 cases). Prominent clinical symptoms of patients with CMV hepatitis were jaundice, yellow eyes (86%), hepatomegaly (64%), spleenomegaly (24%), itchy rash (12%), ascites (7%). Most of cases had viral load in the blood over 5000 copies/ml (92%).

Keywords: acute hepatitis, CMV hepatitis

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I. INTRODUCTION

Acute hepatitis is a relatively common disease in adults as well as children, globally attracting the attention of many scientists, not only because of the high incidence of disease but also due to severe consequences of the disease to the patient in particular and to the health of the community in general.

There are many causes of acute hepatitis such as viruses, bacteria, toxins, drugs, autoimmune diseases, metabolic diseases, ... Children with acute hepatitis are more at risk of complications. For babies, they can be transmitted from mother. However, at this age the symptoms are sometimes atypical, if not done the necessary tests will miss or misdiagnosed with another pathology, many patients when the hospital was in critical condition threatened.

At the National Hospital of Pediatrics, acute hepatitis always ranks second (after encephalitis) among patients who are treated in the infectious department, in which there is an acute progression to become acute hepatitis, a disease may suddenly deteriorate quickly, the child gradually becomes comatose then dies [1].

The prevalence of acute hepatitis and its severe complications for children requires early detection and prognosis of serious risk factors for the disease so that early and proper management can be addressed complications and deaths. Preclinical tests for early diagnosis of diseases are important because of the biochemical changes in hepatitis that occur early before the onset of jaundice and also because the clinical symptoms in children are sometimes atypical.

Currently, acute hepatitis of the alphabet virus group has been studied a lot but some other causes are not in the alphabet group, especially hepatitis CMV has not been fully studied. So we conducted this study with the goal: Describe the clinical epidemiological characteristics of childhood acute hepatitis caused by Cytomegalovirus.

II. SUBJECT AND METHOD OF STUDY

2.1. subject:
All patients were diagnosed with CMV acute hepatitis. Research period: from October 1, 2015, until September 30, 2016 at the National Hospital of Pediatrics.

2.2. Diagnostic criteria for acute hepatitis:
Clinical criteria: disease development acute (within 3 months) with one of the following:
- Fever, fatigue, loss of appetite.
- Gastrointestinal symptoms: bloating, dyspepsia, bloating, pain or severe feeling in the liver.
- Skin, yellow eyes and sclera, dark urine.
- Large liver.

Subclinical criteria: ALT, AST in the blood is elevated (at least 3 times normal value), may be accompanied by manifestations of hyperbilirubinemia, coagulation function, ...

2.3. Criteria for determining CMV hepatitis:
- IgM anti-CMV (+) or blood test CMV PCR (+)
- IgM anti-CMV specific antibody is determined by ELISA technique
- CMV loading is determined by PCR technique as a technique to amplify the viral RNA sequence of the virus.

2.4. Method of study:
- Study design: The cross-sectional combined with qualitative method.
- Sample size: convenient sample selection (select all patients with diagnostic criteria for examination and treatment in a year).
- Research content: Collect data according to a uniform medical record.

III. STUDY RESULTS

During the period from October 2015 to September 2016, there were 128 patients from> 1
In the month to <16 years of age, the diagnosis of acute hepatitis was treated at the National Pediatric Hospital, in which 57 patients with acute viral hepatitis and patients with CMV hepatitis had 42 cases, accounting for 73%.

3.1. Distribution of CMV hepatitis by age group, gender:
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Chart 1. Distribution of patients by age

Male / Female ratio = 1.8 / 1

Chart 2. Diagnosis when visiting hospital for CMV hepatitis

Table 1. The patient's bilirubin concentration upon admission

<table>
<thead>
<tr>
<th></th>
<th>Bilirubin (μmol/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totality</td>
<td>170.53±119.60</td>
</tr>
<tr>
<td>Direct</td>
<td>91.29±71.11</td>
</tr>
<tr>
<td>Indirect</td>
<td>78.05±53.23</td>
</tr>
</tbody>
</table>

Table 2. Average value in the coagulation test of the patient when hospitalized

<table>
<thead>
<tr>
<th>Value</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT ratio (%)</td>
<td>76.68±23.08</td>
</tr>
</tbody>
</table>
Table 3. CMV viral

<table>
<thead>
<tr>
<th>CMV (n=38)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;2000 copies/ml</td>
<td>2</td>
</tr>
<tr>
<td>2000 - 5000 copies/ml</td>
<td>1</td>
</tr>
<tr>
<td>&gt;5000 copies/ml</td>
<td>35</td>
</tr>
</tbody>
</table>

4. DISCUSSION:

4.1. Rate of CMV hepatitis:

During the period from October 2015 to September 2016, 128 patients were diagnosed with acute hepatitis in treatment at the National Hospital of Pediatrics, in which 57 patients with acute viral hepatitis were identified (accounting for 45%). Among patients with hepatitis hepatitis, CMV patients have 42 patients (accounting for 73%). This may be due to the wide spread of CMV epidemiological characteristics worldwide, especially in countries with underdeveloped economies or poor sanitation. In developed countries, adulthood is CMV-positive in about 50%, while underdeveloped countries with CMV infection rates in the community can be up to 100% [6]. This result is relatively consistent with the research of Hoang Trong Kim et al 2003 [2].

4.2. Some clinical epidemiological characteristics of CMV hepatitis:

* Distribution by age, gender:

In our study, the age of CMV hepatitis was particularly high, mainly in the ages of> 1 month to 12 months (37/42 patients, accounting for 88%), this rate is consistent with Hoang's study. Trong Kim and colleagues in 2003 [2].

According to author Pham Nhat An and colleagues in 1998 [1] studied 551 patients with acute hepatitis, of which the ages from 2 months to 12 months accounted for the highest rate (62.07%).

The study of Pham Thi Suu and colleagues in 1995 [3] also results in the age of 2 months to 12 months of age accounted for the highest rate.

Thus, the results of our study, the rate of CMV hepatitis at age> 1 month to <12 months is the most common and gradually decreases with age, similar to the studies of the above authors.

The study by author Pham Nhat An et al 2003 [1] among viral hepatitis, the male rate accounted for 66.1%, higher than female accounted for 33.9%.

Thus, our study is equivalent to the research results on the viral hepatitis etiology group, the incidence of boys is higher than that of girls.

* Clinical and subclinical characteristics:

Common symptoms in CMV hepatitis patients are jaundice (86%), hepatomegaly (64%), fecal stools (38%), fever (40%). According to Hasan TEZER et al. (2016) [5] research on 49 patients with CMV hepatitis with erectile dysfunction (30.6%), hepatomegaly (42.8%), abdominal distention (28.57%), splenomegaly (20.4%), diarrhea (22.44%), vomiting (10.2%). Thus common symptoms in patients with CMV hepatitis in our study are similar to some other studies.

Thus, the clinical symptoms of CMV hepatitis are mainly common: jaundice, fever, fatigue, loss of appetite, dark urine, hepatosplenomegaly and discoloration, ... our research results are similar. For studies of Pham Nhat An [1], Vu Thi Hai Yen [4] and Hasan TEZER [5], Vujacich C et al [8], rare symptoms such as abdominal pain, hemorrhage, ascites.

In our study, royal symptoms were the most common, the symptoms of fatigue, abdominal pain, and muscle pain were less common than the above authors because the author Vu Thi Hai Yen studied on the age group of patients, higher than the patient who was able to communicate, and Vujacich C and colleagues conducted the study on adult patients. This shows that the rate of loss of appetite, fatigue, abdominal pain of our study is low, clinical symptoms different from the study of Hasan TEZER et. al due to different study times, different geographical environments, different ages should have this difference.
Upon admission, the total bilirubin ratio increased significantly (170 ± 119 pmol / l). Authors Tanju Basarir Ozkan and Resit Miistik et al [6] studied 12 patients with CMV-infected cholestatic hepatitis with an average serum Bilirubin concentration of 78.2 ± 54.4pmol / l, direct Bilirubin: 66.3 ± 42.5pmol / l is quite similar to our research. The author Tanju Basarir Ozkan and Resit Miistik et al [6] studied 12 patients with CMV cholestatic hepatitis who saw a viral load of 166-9240 copies / ml. Thus, the results of our study are similar to the authors on the viral load in the very high study group, the load> 5000 copies / ml accounts for 92.2%.

V. CONCLUSION

The prevalence of CMV-induced hepatitis accounts for 73.7% of all viral hepatitis cases at the National Hospital of Pediatrics. Male is more common than female 1.8 / 1. The most common age of CMV hepatitis is from 1 month to 12 months of age (88%). Clinical symptoms appear quite diverse: The most common symptom in the group of CMV hepatitis is jaundice, enlarged liver.

Clinical characteristics:
+ Symptoms of impaired liver function, coagulopathy are usually not severe.
+ Total and direct bilirubin increase, the level of increase is quite high (170 ± 119 mmol / l).

REFERENCES:

4. Vũ Thị Hai Yến (2003), Tìm hiểu căn nguyên, đặc điểm lâm sàng và biến đổi một số chỉ số huyết học, hóa sinh trong viêm gan virus cấp trẻ em tại Bệnh viện Nhi Trung ương, Đại học Y Hà Nội, Luận văn tốt nghiệp học sĩ.