



## Hepatitis A in Adults: Experience from a Moroccan Hospital Center

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### ABSTRACT

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**Background:** In children, hepatitis A virus infection is usually symptom-free and provides long-term immunity. However, in changing socio-economic environments, certain adults encounter infection risks, exposing them to symptomatic illness and complications. This study aims to outline the profile of adult hepatitis A patients.

**Methods:** We conducted a retrospective study from 2017 to 2023, involving all patients aged over 14 years who presented with acute hepatitis and tested positive for anti-HAV antibodies. Demographic, laboratory and clinical data were analyzed.

**Results:** The analysis involved 109 cases (mean age 21 +/- 6 years, 57.8% males). All patients were symptomatic. Among them, 71.6% presented with a pseudo-flu-like syndrome, 89% with jaundice, 50.5% with fever and 30.2% with gastrointestinal symptoms. Thirty patients were hospitalized (26.6%), among them one subfulminant was recorded. Clinically, hepatomegaly was found in 8 patients (7.3%). One patient had presented with a skin rash. Serum alanine aminotransferases levels were more than 50 times the normal range in 47.7% of cases, with an average bilirubin level of 89 mg/l. Severe acute hepatitis was observed in 26.6% of patients.

**Conclusion:** Our findings revealed that over 25% of adult patients experienced severe acute hepatitis, with one patient progressing to acute liver failure. These results underline the importance of raising awareness of hygiene practices and prompt a study of the overall seroprevalence of hepatitis in the adult population in order to improve viral hepatitis prevention and control strategies in the country.

### KEYWORDS

Hepatitis A virus - HAV - Adults – Jaundice - Vaccination

### INTRODUCTION

hepatitis A virus (HAV) infection is the most common form of foodborne viral hepatitis worldwide. Its occurrence is closely linked to poor hygiene and sanitation conditions as well as lower socioeconomic development. The incidence of HAV infection has decreased in many regions of the world due to improvements in socioeconomic status, increased access to clean water, and the availability of hepatitis A vaccines. However, in less developed regions and developing countries such as Morocco, HAV infection remains a public health issue. Known as an acute, self-limiting liver inflammation, Hepatitis A often presents without symptoms in children, whereas symptomatic infection is common among adults.

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The aim of this study is to describe the epidemiological, clinical, therapeutic and evolutionary profile of adult patients with viral hepatitis A.

### METHODS

We conducted a descriptive cohort study over a period of 7 years, from 2017 to 2023 which included all patients over the age of 14 who were seen in outpatient clinics or admitted to the hepatogastroenterology department of the Ibn Rochd University Hospital in Casablanca, Morocco, for acute viral hepatitis A.

The inclusion criteria were as follows:

- Age over 14 years
- Presentation of acute hepatitis with acute cytolysis (Elevated serum aminotransferases levels greater than 10 times the normal range)
- Positive IgM anti-HAV antibodies

Prothrombin levels (PT) were assessed in all patients. Hepatitis was classified as severe if the PT was less than 50%. Acute liver failure was considered when signs of hepatic

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encephalopathy were present in addition to severe acute hepatitis.

Epidemiological, clinical, and laboratory data were collected using a standardized form and analyzed with SPSS software version 20.0. Descriptive analysis involved calculating proportions and frequencies for qualitative variables and means and standard deviations for quantitative variables.

### RESULTS

One hundred nine patients were included in the study. Among them, 57.8% were male, with a male-to-female sex ratio of 1.36. The mean age of the patients was 21 +/- 6 years. More than half of the patients (50.5%) belonged to the 18-25 age group.

Eighty-four percent of the patients came from urban areas, 9% from peri-urban areas, and 6.6% from rural areas. The socioeconomic level was average in 57.8% of the patients and low in 27.6% of the patients. Eighty-eight percent of the patients consumed potable water. Among them, 85% consumed water from the public distribution network. Fast food consumption was found in 54% of the patients. A history of swimming was found in the weeks preceding the symptoms in 17.0% of the patients, a similar case in the surroundings in 23.2% of the cases, medication intake before the onset of jaundice in 30.2% of the patients. Self-medication with paracetamol was reported in 90% of the patients. The use of medicinal plants was reported in 19.6% of the patients. Thirty-six patients (33%) reported not washing their hands systematically during meals and/or after defecation.

All patients were symptomatic. A pseudo-flu-like syndrome was present in 71.6% of the patients, and jaundice in 89%, with an average onset time of 6 days. Fifty percent of the patients were febrile, and 30% presented with gastrointestinal symptoms such as abdominal pain and/or nausea/vomiting and/or diarrhea. Thirty patients were hospitalized (26.6%). Only one subfulminant form was recorded, characterized by the onset of encephalopathy (asterixis) three weeks after jaundice. Clinically, hepatomegaly was found in 8 patients (7.3%). Only one patient had presented with a skin rash. (Table 1)

**Table 1: Clinical Characteristics of the Studied Population**

|                                 | Patients (%) |
|---------------------------------|--------------|
| <b>Males</b>                    | 63 (57.8)    |
| <b>Age</b>                      |              |
| - <18                           | 6 (5.5)      |
| - 18-25                         | 55 (50.5)    |
| - 25-40                         | 38 (34.9)    |
| - 40-55                         | 9 (8.3)      |
| - >55                           | 1 (0.9)      |
| <b>Clinical manifestations:</b> |              |
| - <b>Flu-like syndrome</b>      | 78 (71.6)    |

|                                     |           |
|-------------------------------------|-----------|
| - <b>Jaundice</b>                   | 97 (89.0) |
| - <b>Fever</b>                      | 55 (50.5) |
| - <b>Abdominal Pain</b>             | 20 (18.3) |
| - <b>Diarrhea</b>                   | 7 (6.4)   |
| - <b>Vomiting</b>                   | 6 (5.5)   |
| <b>Clinical Form:</b>               |           |
| - <b>Severe acute hepatitis</b>     | 29 (26.6) |
| - <b>Acute liver failure</b>        | 1 (0.9)   |
| - <b>Relapsing hepatitis</b>        | 9 (8.3)   |
| <b>Extrahepatic manifestations:</b> |           |
| - <b>Anemia</b>                     | 27 (24.8) |
| - <b>Thrombocytopenia</b>           | 6 (5.5)   |
| - <b>Rash</b>                       | 1 (0.9)   |

On the biological level, ALT levels were more than 50 times the normal range in 47.7% of cases, with an average bilirubin level of 89 mg/l. Severe acute hepatitis was observed in 26.6% of patients. In the complete blood count (CBC), 25% of patients had anemia and 5% had thrombocytopenia. An autoimmune origin of anemia was investigated in one patient and confirmed by a positive Coombs test. All patients received symptomatic treatment with antiemetics for nausea/vomiting, transit slowers for diarrhoea and antispasmodics for abdominal pain. Only one patient with asterixis was treated with oral lactulose. The use of any other medication, in particular paracetamol, was prohibited. No patient was put on assisted ventilation and no patient underwent liver transplantation.

The outcome showed remission in 98 patients (89.9%), with 9 patients (8.3%) experiencing a relapsing clinical form. The remaining patients were lost to follow-up.

### Discussion:

In our study on acute viral hepatitis A cases among adults, we identified 109 patients over a period of 7 years, among whom 29 were classified as severe and 1 with acute liver failure.

The hepatitis A virus (HAV), primarily transmitted via the oro-fecal route, is the most common cause of acute hepatitis worldwide (1). In children under 6 years old, the infection is often pauci- or asymptomatic, whereas 70% of adults will develop symptoms (2). In endemic areas such as Morocco (3), most individuals acquire lifelong immunity following childhood exposure to the virus (4). However, due to improved hygiene conditions and rapid socio-economic evolution in certain regions of the world, there is a decrease in HAV infection incidence among children, while the disease prevalence increases among adults (5).

On the clinical front, the infection typically presents asymptotically in children, while jaundice is a common manifestation in adults. The typical clinical presentation, including cases in both adolescents and adults, has been extensively documented in five studies hailing from India (6, 7, 8), Pakistan (9), and Sri Lanka (10). These studies uniformly reported patients exhibiting jaundice (80 to 100%), abdominal pain (26 to 82%), and fever (45 to 91%). Additional symptoms such as nausea/vomiting, anorexia, and

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fatigue were also noted. Studies focusing on older age cohorts documented elevated rates of hepatomegaly (73 to 100%). Also, a study of 221 adult patients diagnosed with hepatitis A revealed that 18 patients (8.3%) developed acute severe hepatitis, resulting in 3 deaths (11). Our study findings align with those reported in the literature. However, we observed only one case of acute liver failure, and none of our patients had died.

Among the complications of hepatitis A, clinical relapse is observed, characterized by the recurrence of symptoms within six months following the initial diagnosis. Symptoms are often less severe and resolve in less than three weeks (12). In a series involving 297 adults with acute hepatitis A infection, relapse was observed in 13% of patients (13). This form has been described in both adults and children, although it appears to persist longer in adults (14). In our study, 8.3% of the patients experienced a relapse during the course of the disease.

In addition to the classic symptoms of hepatitis A, extrahepatic manifestations, although rare, can occur in various ways. These can be cutaneous, musculoskeletal, renal, or neurological (15). Hematological manifestations such as autoimmune thrombocytopenic purpura and anemia, secondary to hemolysis or aplastic origin, have also been identified. Most extrahepatic manifestations have been found in adults, particularly in those with a relapsing clinical form (2). In our series, 25% of patients had anemia and 5% had thrombocytopenia. Only one patient had a skin rash.

Since treatment is not specific, prevention of hepatitis A through vaccination is the standard approach in many countries worldwide, and numerous countries have adopted universal hepatitis A vaccination for their children. However, as of May 2019, hepatitis A vaccine was only used or planned to be introduced into routine childhood vaccination in 34 countries worldwide (16). In the United States, the Advisory Committee on Immunization Practices recommends vaccination for individuals at high risk of hepatitis A infection, such as laboratory personnel handling hepatitis A virus or men who have sex with men, as well as individuals at risk of developing severe forms (immunocompromised patients or those with chronic liver disease) (17).

### CONCLUSION

In conclusion, our study provides a comprehensive overview of the epidemiology, clinical and biological characteristics, and outcomes of hepatitis A among Moroccan patients. Our findings revealed that over 25% of adult patients experienced severe acute hepatitis, with one patient progressing to acute liver failure. These findings highlight the importance of raising awareness about hygiene practices, ensuring the safety of drinking water, and effectively managing symptoms in individuals diagnosed with hepatitis A. Additionally, our data strongly support the need for conducting an extensive seroprevalence investigation of hepatitis A across the adult population. This initiative aims to enhance our understanding

of disease prevalence, identify high-risk groups, and improve prevention and control measures for viral hepatitis nationwide.

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