Journal of Clinical Gastroenterology and Hepatology
ISSN: 2575-7733

Open Access Research Article

Etiological and Evolutionary Profile of Acute Hepatitis: A Moroccan Center Experience

M Kadiri*, I Benelbarhdadi, M Borahma, FZ Ajana

Department of Hepato-Gastroenterology, Ibn Sina Hospital, Mohamed V University, Rabat, Morocco

ABSTRACT

Aim: Acute hepatitis is a severe inflammation of the liver, with disturbance of markers of liver disease and signs of acute liver failure (jaundice and INR over 1.5), the risk is developing fulminant hepatitis. Our aim is to describe the evolutionary and etiological profile of acute to severe hepatitis.

Materials and methods: A descriptive and retrospective study was conducted on 17 patients who were admitted with an acute and severe hepatitis over a 2 years period.

Results: Autoimmune hepatitis was the main cause of acute hepatitis in 30% of cases (n=5), followed by acute viral hepatitis in 23, 5% of cases (n=4) of which 2 was hepatitis A and 2 was CMV (Cytomegalovirus) hepatitis. DILI (Drug Induced Liver Injury) were found in 17, 6% of cases (n=3) caused by imatinib, carbimazole and antibacillary drugs. In 11, 7% of cases (n=2) it was Wilson's disease in 2 patients, and alcoholic hepatitis in 2 other patients 11, 7%, and finally in 5,8% (n=1) of cases, a syphilitic hepatitis was diagnosed. Therapeutic management was based on the etiological treatment. Long-term outcome showed a clinical and biological improvement in 70 % of cases (n=12), and a fulminant hepatic failure in 30% (n=5) leading to death in all this cases.

Conclusion: Treatment consists of specific management of the etiology, which must be carried out at an early stage to achieve a satisfactory improvement. In our series the most frequent etiology was autoimmune hepatitis.

Keywords: Acute hepatitis; Etiological profile; Hepatic failure; Autoimmune hepatitis

INTRODUCTION

Acute hepatitis is a term used to describe a wide variety of conditions characterized by acute inflammation of the hepatic parenchyma or injury to hepatocytes resulting in elevated liver function indices, the factor that conditions the prognosis remains the appearance of hepatic encephalopathy, of multiple etiologies may be life threatening.

The most common infectious cause of acute hepatitis is due to a viral infection (acute viral hepatitis). Nevertheless, acute hepatitis can result from a wide variety of noninfectious causes as well that include but not limited to are drugs (drug-induced hepatitis), alcohol (alcoholic hepatitis), immunologic

Received:	06-September-2023	**Manuscript No:**	IPJCGH-23-17687
Editor assigned:	08-Septmber-2023	**PreQC No:**	IPJCGH-23-17687 (PQ)
Reviewed:	22-September-2023	**QC No:**	IPJCGH-23-17687
Revised:	04-January-2025	**Manuscript No:**	IPJCGH-23-17687 (R)
Published:	11-January-2025	**DOI:**	10.36648/2575-7733.9.1.58

Corresponding author: M Kadiri, Department of Hepato-Gastroenterology, Ibn Sina Hospital, Mohamed V University, Rabat, Morocco; E-mail: maryeme.kadiri@gmail.com

Citation: Kadiri M, Benelbarhdadi I, Borahma M, Ajana FZ (2025) Etiological and Evolutionary Profile of Acute Hepatitis: A Moroccan Center Experience. J Clin Gastroenterol Hepatol. 9:58.

(autoimmune hepatitis, primary biliary cholangitis) or as a result of indirect insult secondary to biliary tract dysfunction (cholestatic hepatitis), pregnancy-related liver dysfunction, shock or metastatic disease [1-6].

In morocco, studies on the prevalence, characteristics, and outcomes of acute and severe hepatitis are lacking. The aim of this study was to describe the different etiologies, clinical, treatment characteristics, and outcomes of acute hepatitis patients admitted to our hospital.

MATERIALS AND METHODS

This is a retrospective and descriptive study included 17 patients admitted in our hospital with acute to severe hepatitis over a period from 2021 to 2023.

Inclusion criteria for cases:

- All patients under 16 years old.
- Patient with recent onset of jaundice, acute cytolysis, conjugated hyperbilirubinemia or mixed hyperbilirubinemia.

Exclusion criteria for cases:

- All young patients <16 years old.
- Patients with sepsis-induced multi-organ failure.
- Patients with known causes of chronic liver diseases, hepatocellular carcinoma, or other malignancies.

Records of the duration of symptoms, hospitalization, and the outcomes were collected.

Liver function tests, pro-thrombin time and International Normalized Ratio (INR), serum creatinine, Complete Blood Count (CBC), and abdominal ultrasound were performed for all patients.

Acute hepatitis case was defined as acute illness with jaundice and liver enzyme levels >10 × upper limit of normal.

Acute severe hepatitis was defined as the previous description, and added to that: An INR>2.5.

RESULTS

17 patients were included in this study. The average age was 36 years and ranged from 17 to 70 years, with a sex ratio of 1.8 M/F. 11.7% patients (n=2) had a past medical history of alcohol, 5.8% (n=1) had hyperthyroidism treated by carbimazole, 5.8% (n=1) was suffering from pulmonary tuberculosis and was under anti-bacillary treatment, and finally 5.8% (n=1) was treated for chronic myeloid leukemia by imitinab.

Clinically: 52.9% of patients had jaundice with dark urine (n=9), 29.4% patients had ascites (n=5), 23.5% suffered from abdominal pain (n=4), 17.6% had isolated ascites (n=3), 35% patients (n=6) had isolated splenomegaly, 23.5% had hepatomegaly (n=4), 1 patients had them both 5.8%, 1 patient had grade 1 hepatic encephalopathy, none of the patients presented with bleeding or diarrhea (**Tables 1 and 2**).

Table 1: Demographical, clinical, biochemical parameters and ultrasound of the 17 studied patients.

Variable	Total (n=17)
Age (yr)	36 (17-70)
Sex (male/female), % male	11/6, 64%
Clinical presentations	
Jaundice	9 (52.9%)
Abdominal pain	4 (23.5%)
Hepatomegaly	4 (23.5%)
Splenomegaly	7 (41%)
Ascitis	5 (29.4%)
Nausea and vomiting	0
Bleeding	0
Diarrhea	0
Dark urine	9 (52.9%)
Encephalopathy	
Grade I	1 (5.8%)
Grade II	0

Grade III	0
Grade IV	0
Hepatitis classification on admission	
Acute hepatitis	11 (64%)
Fulminant	0
ACLF	6 (35%)
Duration of symptoms (days)	15,3
Duration of hospitalisations (days)	14,1
Laboratory parameters on admission	
WBCs (*1000/mm^3)	8,32
Hemoglobin (mg/dl)	10,4
Platelets (*1000/mm^3)	103
Albumin (g/l)	25
AST (U/L) median	795
ALT (U/L) median	1140
ALP (U/L)	130
GGT (U/L)	421
Total bilirubin (mg/l)	180
Prothrombin time (%)	47.8%
INR	1,6
Creatinine (mg/l) median	11,3
Liver ultrasound %	
Normal	52
Fatty liver	11,7
Portal hypertension	35
Cirrhosis	35

Note: WBCs: White Blood Cells; ALT: Alanine Aminotransferase (normal: 0–45 IU/L); AST: Aspartate Aminotransferase (normal: 0–34 IU/L); ALP: Alkaline Phosphatase (normal: 46–116); INR: International Normalized Ratio; GGT: Gamma-Glutamyl Transferase; ACLF: Acute on Chronic Liver Failure

Table 2: The identified causes of acute hepatitis in the studied group.

Causes	Total 100% (n=17)
AIH	30% (n=5)
Acute viral hepatitis	23,5% (n=4)
HAV	50% (n=2)

CMV	50% (n=2)
DILI	17.6% (n=3)
Wilson disease	11.7% (n=2)
Alcoolic hepatitis	11.7% (n=2)
Syphilitic hepatitis	5.8% (n=1)

Note: AIH: Autoimmune Hepatitis; HAV: Hepatitis A Virus; CMV: Cytomegalovirus; DILI: Drug-Induced Liver Injury

Imaging was done and showed heterogeneous parenchymal liver suggesting cirrhosis with portal hypertension in 35% patients (n=6), a fatty liver with a thickened gall bladder wall in 11.7% (n=2) patients, the abdominal ultrasound was normal in 52% (n=9) the main etiologies were the following:

Autoimmune hepatitis predominated in 30% (n=5), diagnosed by: Positive Anti-Smooth Muscle Antibodies (ASMA) and with liver biopsy showing interface hepatitis in 50% of patients (n=2) and the presence of plasma cells with hepatic rosette formation in 2 other patients.

Followed by the viral hepatitis in 23.5% (n=4): of which 2 were CMV hepatitis showing a high titers of serum globulin positive IgG at 12 and IgM at 5,13 (Normal<0,8) with a high viral load (>3.7 log = 5483 UI/mL) in the 2 patients. The 2 other patients had an acute Hepatitis A Virus (HAV) diagnosed by a positive anti-HAV immunoglobulin M (IgM) antibodies.

Then, the Drug Induced Liver Injury (DILI) came third and concerns in 17,6% (n=3), the drug involed were as follows:(The antituberculosis drugs, imatinib and carbimazol), with a RUCAM((Roussel Uclaf Causality Assessment Method) score of 6 to 8 for the 3 patients. 18.18% (n=2) was an alcoholic hepatitis in patients with a long-term heavy alcohol consumption (>50 g/j) after elimination of other causes of acute hepatitis. 18,18% were diagnosed with Wilson disease (n=2)) with a probable Leipzig scoring system.

An acute syphilitic hepatitis was found in 5.8% (n=1), diagnosed by a positive syphilis serology: TPHA at 2560UI/L, a VDRL at 1/32 UI/L with a significant liver biopsy showing the presence, on immunohistochemistry of anti treponemal-pallidum antibodies. The management of acute hepatitis was based on the specific etiological factor implicated in the acute injury to the hepatocytes. The alcoholic hepatitis was treated by prednisolone 40 mg daily for 1 month associated with N-Acetyl Cysteine (NAC) with a maddrey score >32 and abstinence from alcohol. The DILI was supported by suspending the offending drugs combined with NAC. A steroid therapy at a dose of 0,75 mg/kg/d was initiated for AIH. A treatment with ceftriaxone was started in syphilitic hepatitis.

Wilson's disease was treated with D-penicillamine, hepatitis A was treated by a supportive treatment including IV fluids, antiemetics and symptomatic treatment with a rapid resolving in 1 week. A treatment with ganciclovir 5 mg/kg per 20 day has been initiates for CMV hepatitis.

Long-term outcome showed a clinical and biological improvement in 70% patients (n=12), and death in 30% (n=5) patients: 17.6% patients n(=3) from complications of their cirrhosis which was already at the end stage of liver failure and 11.7% patients (n=2) by progression to fulminant hepatitis

DISCUSSION

Viral hepatitis and paracetamol-induced liver injury are the leading drivers of acute hepatitis and Acute Liver Failure (ALF) worldwide [7,8].

Asian and African countries have a higher incidence of hepatotropic viral infection, particularly hepatitis A, B and E [9,10]. In the US, DILI is responsible for half of acute hepatitis cases, followed by indeterminate causes, viral hepatitis (hepatitis B, hepatitis A), and the Autoimmune Hepatitis (AIH). Rare causes have also been reported including, budd-chiari syndrome, ischemia, Wilson disease, cancer, and heat stroke [11-14]. In our series, the predominant etiology was autoimmune hepatitis in one-third of cases, followed by the acute viral hepatitis and then the DILI.

Auto-immune hepatitis: AIH may occur in a normal liver initially resulting in acute hepatitis, or may be the circumstance leading to Acute on Chronic Liver Failure (ACLF)[15]. In comparison with chronic AIH, acute cases are more likely to show low to moderate necrosis, relatively milder portal inflammation, less prominent plasma cells, and less portal-based fibrosis [16-17]. Acute AIH typically presents with massive hepatic necrosis. [18,19] In our series, three quarters of our patients were in ACLF, one of whom died.

Viral etiology: HAV is the primary cause of acute viral hepatitis globally and one of the culprits in the foodborne disease outbreaks, particularly in developing and some regions of developed countries [20]. Although the incidence of hepatitis A greatly depends on the hygienic, sanitary and socio-economic status, childhood exposure to this virus in developing countries is usually asymptomatic, consequently contributing to an endemicity with less reported cases and less common outbreaks. In contrast, people in developed countries are more commonly exposed to this virus at later stages in life and could suffer from greater symptoms, thereby leading to more reported cases and outbreaks.

The nonhepatotropic viruses are more uncommon but can cause acute hepatitis and acute liver failure. The most

frequent one is represented by cytomegalovirus infection, then herpes simplex virus and adenovirus. These viruses may cause severe infections in multiple organs in immunocompromised individuals, including fulminant hepatic failure. In our series, the CMV infection was responsible in a rapid progression to acute liver failure leading to death in one patient (5.8%).

Non-paracetamol-related DILI represents 11% of all acute severe hepatitis cases in the US. 65% of them are attributed to antibiotics and antiepileptic agents.

The assessment of causality for DILI can be complex and extremely challenging, which requires thorough history taking, exclusion of alternative etiologies, familiarization with literation on the propensity of a specific drug to cause hepatotoxicity, and recognition of laboratory and histologic patterns of liver injury. Recently the US Drug-Induced Liver Injury Network (DILIN) prospective study used two methods to assess DILI causality: A structured expert opinion process and the Roussel-Uclaf Causality Assessment Method (RUCAM). In our series, the drugs involved were (antituberculosing drugs, carbimazole and imatinib) with a RUCAM score of 6 to 8.

Alcoholic hepatitis: 70-72 Patients with AFD have a history of chronic, heavy alcohol consumption and often report increased alcohol consumption prior to presentation, which was the case for our 2 patients.

It usually manifests as steatosis or cirrhosis. The prevalence of patients who underwent liver biopsy is very low ranges from 0,8% to 14% due to blood crase disorders that make percutaneous biopsy impossible, so trans-jugular biopsy remains the only option but in morocco, this technique is very rare. In our series 1 patient underwent an early biopsy before the acute liver failure. The prognosis is usually good, and most patients recover rapidly after alcohol abstinence if diagnosis and treatment are established very quickly.

Wilson Disease (WD): In adults, acute/fulminant hepatic failure due to WD, is uncommon, and accounts for approx. 3% of acute liver failure cases in the USA. Fulminant liver failure occurs predominantly in young females (female: male ratio 4:1). Urgent referral to a transplant center is key for patient survival. The diagnosis is suspected when liver failure and jaundice are accompanied by anemia and relatively low serum aminotransferases and low alkaline phosphatase in a young patient. A working party at the 8th International Meeting on Wilson disease and Menkes disease in Leipzig/Germany, devised a weighted scoring system to help clinicians evaluate patients for WD, using clinical, biochemical, and, molecular genetic testing for WD. This has come to be known as the Leipzig criteria (**Table 3**). In our series, the 2 patients were young (17 and 20 years) wich made us suspect the diagnosis of WD associated with elevated cupruria, sever onset jaundice, very low ceruloplasmin level and the presence of kayser fleisher ring.

Table 3: scoring system developed at the 8th international meeting wilson's disease, Leipzig 2001.

S. no	Typical clinical symptoms and signs	
1	**KF rings**	
	Present	2
	Absent	0
	Neurologic symptoms**	
	Severe	2
	Mild	1
	Absent	0
	Serum ceruloplasmin	
	Normal (>0.2 g/L)	0
	0.1-0.2 g/L	1
	<0.1 g/L	2
	Coombs-negative hemolytic anemia	
	Present	1
	Absent	0
2	**Other tests**	

Liver copper (in the absence of cholestasis)	
>5x ULN (>4 umol/g)	2
0.8-4 umol/g	1
Normal (<0.8 umol/g)	-1
Rhodanine-positive granules*	1
Urinary copper (in the absence of acute hepatitis)	
Normal	0
1-2x ULN	1
>2x ULN	2
Normal, but >5x ULN after D-penicillamine	2
Mutation analysis	
On both chromosomes detected	4
On 1 chromosome detected	1
No mutations detected	0
Total score	**Evaluation**
4 or more	Diagnosis established
3	Diagnosis possible, more tests needed
2 or less	Diagnosis very unlikely

Note: *If no quantitative liver copper available,**or typical abnormalities at brain magnetic resonance imagning. KF: Kaysers Fleischer; ULN: Upper Limit of Normal

Syphilitic hepatitis: Syphilitic Hepatitis (SH) has a variable degree of incidence from 0.24% to 17%, with the development of clinically evident hepatitis being quite rare. The clinical manifestations of HS in adults are often nonspecific and multifaceted. Rash, fatigue or lack of appetite, hepatomegaly, and jaundice were the most common. Hepatosplenomegaly is often found on physical examination or imaging. Laboratory tests of SH will show abnormal liver enzymes with markedly increased ALP and GGT, in contrast to mildly elevated ALT or AST levels. Our patient presented with signs and symptoms of hepatitis with significant cytolysis and icteric cholestasis, the diagnosis of syphilitic hepatitis was confirmed on elevated VDRL titers, positive TPHA, no evidence of fatty changes in the liver on abdominal ultrasound, a liver biopsy was performed and showed an inflammatory infiltrate with polynuclear cells with the presence, on immunohistochemistry, of anti treponemal-pallidum antibodies.

CONCLUSION

Prognosis of acute hepatitis depends on the etiology causing direct injury to the hepatocytes. Timely identification of the etiological agent causing acute hepatitis and the specific management is extremely important to reduce morbidity and mortality. In our series the most frequent etiology was autoimmune hepatitis.

Despite optimal management, the evolution can be unfavorable with a rapid evolution to fulminant hepatitis and a liver transplantation in this case becomes an urgent indication.

REFERENCES

1. Wilson TR (2005) The ABCs of hepatitis. Nurse Pract. 30(6):12-21.
2. Beckingham IJ, Krige JE (2001) ABC of diseases of liver, pancreas, and biliary system. BMJ. 322(7284):477-480.
3. Hosseini N, Shor J, Szabo G (2019) Alcoholic hepatitis: A review. Alcohol Alcohol. 54(4):408-416.
4. Crabb DW, Im GY, Szabo G, Mellinger JL, Lucey MR (2020) Diagnosis and treatment of alcohol-associated liver diseases: 2019 practice guidance from the American association for the study of liver diseases. Hepatology. 71(1):306-333.
5. Kaplowitz N (2004) Drug-induced liver injury. Clin Infect Dis. 38(Supplement_2):S44-S48.

6. Mikolasevic I, Filipec-Kanizaj T, Jakopcic I, Majurec I, Brncic-Fischer A, et al. (2018) Liver disease during pregnancy: a challenging clinical issue. Med Sci Monit. 24:4080.
7. Bernal W, Hyyrylainen A, Gera A, Audimoolam VK, McPhail MJ, et al. (2013) Lessons from look-back in acute liver failure? A single centre experience of 3300 patients. J Hepatol. 59(1):74-80.
8. Shalimar, Acharya SK, Lee WM (2013) Worldwide differences in acute liver failure. Future Medicine Ltd.
9. Lee WM (2008) Etiologies of acute liver failure. InSeminars in liver disease ©Thieme Medical Publishers. Curr Opin Crit Care 28(2):142-152.
10. Sedhom D, D'Souza M, John E, Rustgi V (2018) Viral hepatitis and acute liver failure: Still a problem. Clin Liver Dis. 22(2):289-300.
11. Ostapowicz G, Fontana RJ, Schiodt FV, Larson A, Davern TJ, et al. (2002) Results of a prospective study of acute liver failure at 17 tertiary care centers in the United States. Ann Intern Med. 137(12):947-954.
12. Reuben A, Koch DG, Lee WM (2010) Drug-induced acute liver failure: Results of a US multicenter, prospective study. Hepatology. 52(6):2065-2076.
13. Manka P, Verheyen J, Gerken G, Canbay A (2016) Liver failure due to acute viral hepatitis (AE). Visc Med. 32(2): 80-85.
14. Rahim MN, Liberal R, Miquel R, Heaton ND, Heneghan MA (2019) Acute severe autoimmune hepatitis: Corticosteroids or liver transplantation?. Liver Transpl. 25(6):946-959.
15. Canh HN, Harada K, Ouchi H, Sato Y, Tsuneyama K, et al. (2017) Acute presentation of autoimmune hepatitis: A multicentre study with detailed histological evaluation in a large cohort of patients. J Clin Pathol. 70(11):961-969.
16. Kessler WR, Cummings OW, Eckert G, Chalasani N, Lumeng L, et al. (2004) Fulminant hepatic failure as the initial presentation of acute autoimmune hepatitis. Clin Gastroenterol Hepatol. 2(7):625-631.
17. Stravitz RT, Lefkowitch JH, Fontana RJ, Gershwin ME, Leung PS, et al. (2011) Autoimmune acute liver failure: Proposed clinical and histological criteria. Hepatology. 53(2):517-526.
18. Yeoman AD, Westbrook RH, Zen Y, Bernal W, Al-Chalabi T, et al. (2014) Prognosis of acute severe autoimmune hepatitis (AS-AIH): The role of corticosteroids in modifying outcome. J Hepatol. 61(4):876-882.
19. Lemon SM, Ott JJ, van Damme P, Shouval D (2018) Type A viral hepatitis: A summary and update on the molecular virology, epidemiology, pathogenesis and prevention. J Hepatol. 68(1):167-184.
20. Alves VA (2018) Acute viral hepatitis: Beyond A, B, and C. Surg Pathol Clin. 11(2):251-266.