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Epidemiological charactristics of acute hepatitis in tertiary care hospital.

Hafiz Mughees Ather[1], Arfan Mahmood[2], Affan Shahid[3], Mohammed Osama[4], Mohammad Idrees Shani[5]

1. MBBS, FCPS Med & Gastro, MRCP Med & Gastro, ERCP Fellowship Bangkok and SZPGMI. HOD Gastroenterology, In charge Hepatitis Treatment Program FMU/PMC. Faisalabad Medical University, Ghulam Mohammed Abad General Hospital, Faisalabad.
2. MBBS, FCPS Gastroenterology Assistant Professor Gastroenterology Faisalabad Medical University, Ghulam Mohammed Abad General Hospital, Faisalabad.
3. MBBS, FCPS Part-II Trainee Gastroenterology Faisalabad Medical University, Ghulam Mohammed Abad General Hospital, Faisalabad.
4. MBBS, FCPS Gastroenterology Senior Registrar Gastroenterology DHQ Teaching Hospital, Sahiwal Medical College.
5. MBBS, FCPS (Medicine) Assistant Professor Medicine Faisalabad Medical University, Allied Hospital, Faisalabad.

Correspondence Address:
Dr. Hafiz Mughees Ather
Department of Gastroenterology
Faisalabad Medical University,
Ghulam Mohammed Abad General Hospital, Faisalabad.
mafcps@yahoo.com

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ABSTRACT… Objective: To record the epidemiological, characteristics of Acute hepatitis patients. **Study Design.** Cross Sectional study. **Setting:** Government General Hospital Ghulam Muhammad Abad, Faisalabad. **Period:** March 2019 to 30th of September 2019. **Material & Methods:** A total of 92 patients included in the study. Patient's epidemiological characteristics, symptoms and lab results were recorded during hospital stay. Categorical variables were analyzed using Chi-Square and Fissure Exact tests. P value of <0.05 was considered statistically significant. **Results:** 78% were male & 22% were female. Water source was 16% filtered water, 32% ground water & 52% was Government supplied water. Most common symptom was yellow sclera (100%), Dark urine (100%), Nausea, fatigue and anorexia (Each 87%), Vomiting (83%), Fever (73%), Right hypochondriac pain (70%), Body aches (66%) and headache was 61%. Among the risk factors other than water source, outside eating was present in 74% and tattooing was present in 5% while blood transfusion history and Ear/Nose piercing was 0%. All 92 patients discharged in stable condition (100%). Tests for determination of cause i.e HAV & HEV serology were ordered in each case. **Conclusion:** Young males were affected more commonly. Presentation of acute hepatitis varies in symptoms but mostly the disease is self-limiting and running a mild course without leading to liver failure. Most common risk factor was outside eating in unhygienic environment which should be avoided.

Key words: Acute Hepatitis, Autoimmune Hepatitis, HAV-IgM, HEV-IgM, HIV co-infection, Jaundice, Water Borne Epidemics.

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INTRODUCTION

Acute hepatitis is one of the common presentations in OPD and medical Emergency. Hepatitis A and E are common causes of acute hepatitis.[1] Approximately 5-10% cases of acute hepatitis cannot be attributed to any of the known causes of viral hepatitis. In these cases other causes like toxins, metabolic and genetic conditions are also not found. Specific cause cannot be identified in another approximately 50% of cases of fulminant hepatitis. Whether other unidentified viruses cause acute hepatitis remains an unanswered question. Despite intense investigations, no other types of hepatitis viruses have been identified.

Acute viral hepatitis usually presents with symptoms which are usually non-specific and include malaise, fatigue, nausea, anorexia and arthralgias. Fever is usually low grade. If the disease progresses, it causes jaundice, yellow sclera, dark urine and pruritis. Other viruses like CMV, EBV, HSV or VZV and coxsackie virus can also result in acute hepatitis. Toxic bacterial agents like Toxoplasma and Leptospira may also share clinical features of acute hepatitis.

Drugs and anesthetic agents can produce symptoms similar to acute hepatitis. This is the reason why detailed history is important in diagnosis of acute hepatitis. Ethanol intake is also associated with elevated aminotransferases around 300IU/ml. In this condition serum AST levels exceed serum ALT levels. Other differentials are Cholelithiasis, CBD stones, Bacterial Cholangitis, acute Pancreatitis and other medical conditions like DKA and Acute Intermittent Porphyria. Biliary obstruction resulting from CBD stones, tumors of CBD and pancreas also present like acute

hepatitis. If we consider clinical features carefully then we can differentiate acute viral hepatitis from Ischemic Liver Injury or congestive hepatopathy.

In acute hepatitis aminotransferase levels exceeds 500IU/ml and sometimes above 2000IU/ml. ALT is typically higher than AST in these cases.[2] Elevation of AST and ALT usually elevated in prodromal phase followed by jaundice and elevated bilirubin. Albumin and coagulation tests are usually normal except in the cases of acute liver failure associated with acute hepatitis.

Acute Liver Failure patients should be admitted in ICU and their biochemical and clinical features should be monitored. In our setup although Acute Hepatitis A and E is more common than other viruses but data in this subject is very sparse and detailed studies are needed to know the epidemiological characteristics of acute hepatitis patients of acute hepatitis. That is why we conducted a study on the patients of acute hepatitis to record their epidemiological and biochemical characteristics.

MATERIAL & METHODS

Study Design

This was a single center cross-sectional study. All patients were included in one group It involved all patients reported to Government General Hospital Ghulam Muhammad Abad, Faisalabad with acute jaundice from fist March 2019 to 30th \September 2019. Patients of Chronic Liver Disease were excluded from the study. A total of 92 patients included in the study. A Performa was prepared and filled up during hospital admission. Patient's epidemiological characteristics, symptoms and lab results were recorded on the Performa during hospital stay. Study was conducted in the Department of Gastroenterology, PMC, FMU, Faisalabad. Study was approved from ethical review committee. Data was gathered in excel file and then entered on SPSS. Categorical variables were analyzed using Chi-Square and Fissure Exact tests. P value of <0.05 was considered statistically significant.

RESULTS

A total of 92 patients were included in the study. 78 % were male and 22 % were female as shown in Figure-1. Frequency of different symptoms in patients is shown in Figure-2.

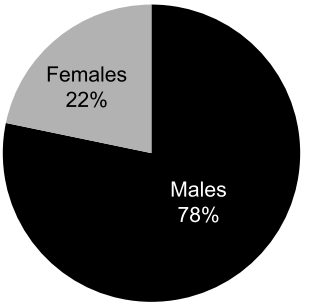
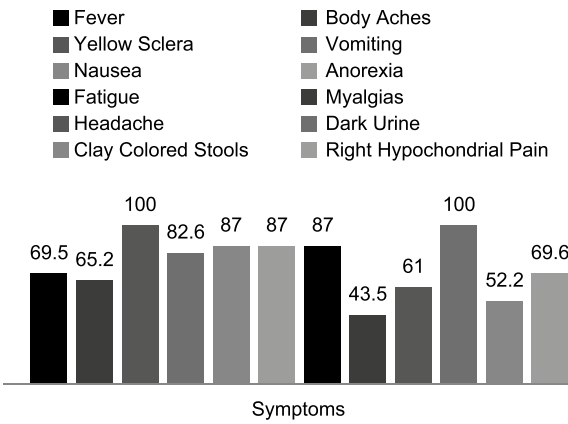


Figure-1. Percentage distribution of gender.

In our study 22% patients were female and 78% were male.



Figur-2. Percentage of different symptoms.

In our study yellow sclera and vomiting were most common symptoms with a prevalence of 100%, followed by nausea, anorexia and fatigue with a prevalence of 87% each. Myalgia was the least prevalent symptom present in 43.5%. No patient was positive for either HCV or HBV.

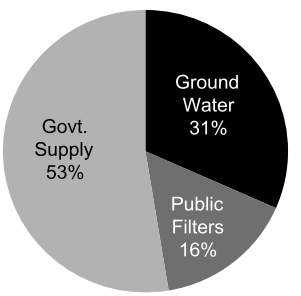


Figure-3. Water supply source of patients.

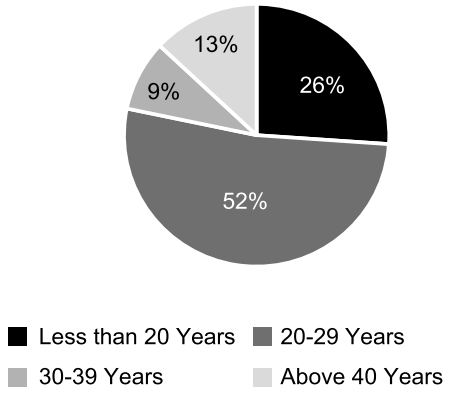


Figure-4. Percentage of patients in different age groups.

Variable	Number of Patients (Total patients=92)	Percentage of Patients
Outside Eating	68	73.9%
Blood Transfusion in last 6 months	0	0%
Tattooing	5	5.5%
Ear, Nose Piercing	0	0%
Cholangitis	0	0%
Need for ICU during hepatitis management	0	0%
Need of Transplant	0	0%
Prothrombin Time < 18sec	81	88%
Prothrombin Time 19-20 Sec	0	0%
Prothrombin Time > 20sec	11	12%
Albumin < 2.8G/dl	0	0%
Albumin 2.8 to 3.4G/dl	0	0%
Albumin 3.5G/dl or above	92	100%
S/Sodium <135mg/dl	8	9%
S/Sodium 136-155mg/dl	0	0%
S/Sodium >155mg/dl	84	91%
S/Potassium < 3.5mg/dl	39	42%
S/Potassium 3.5-5.5mg/dl	22	24%
S/Potassium > 5.5mg/dl	31	34%
Bilirubin <1.5mg/dl	0	0%
Bilirubin > 3.5mg/dl	92	100%

Table-I. Epidemiological Characteristics of Acute Hepatitis.

DISCUSSION

Our study was conducted in department of gastroenterology of Faisalabad Medical University Government General Hospital, Ghulam Mohammed Abad Faisalabad. The patient population here belongs to lower socioeconomic status and not affording for doing serological tests which were needed to confirm the etiology of acute hepatitis.

The study of S.Korsman[3] showed increased seroprevalance of HAV and HEV antibodies with age. This association was likely due to pork intake, suggesting transmission route other than water-borne route. In our patients there is no history of pig meat/pork intake.

In the study of Jian-Wu[4] it was shown that prevalence of autoimmune hepatitis antibodies increased with acute HAV and HEV cases. 37% cases were positive for ANA, 22% were positive for ASMA. 16.2% cases were positive for ANCA. In our study we did not do autoimmune antibodies in patients with acute hepatitis.

Keisuki Nonaka[5] documented acute liver failure associated with Influenza A virus in an 84 years old man with multiple co-morbidities. In our patients we did not do autopsy of any acute hepatitis patients as no patient expired.

The study of Monique Foster MD[6] showed acute hepatitis A outbreak associated with drug use and homelessness. In our study patients with acute HAV and acute HEV were associated with outside eating and unhygienic water intake.

In the study of Lene.H.Harrietshoj[7] HEV epidemiology in Tanzania, the author studied prevalence of HEV in HIV positive patients during pregnancy. None of our patients were HIV positive.

In the study of Melgaco J[8], the author showed that the Prolong course of hepatitis E virus can be treated by administrating immunosuppressant. In our study, no patient had prolonged course of acute hepatitis needing immunosuppressant.

In the study of Harltl J[9], the author showed that the burden of hepatitis E infection has been under-estimated but know the incidents of hepatitis E virus infection is increase due to increased testing.

Nan-You-Chen[10] observed higher prevalence/co-infection of HIV and syphilis with more systemic symptoms and higher LFT's. In our study no co-infection was observed during cases of acute hepatitis infection. He also observed the recent travel history was most often repeated risk factor as well as homosexuality in men and recent HIV infection. In our setup these risk factors were not reported or checked in the study. More over these cases of Acute Hepatitis A were more symptomatic.

In the study of Gamal Hussain[11], among the patients of acute hepatitis, 26.8 % had acute HEV, 13.8% had hepatitis A and 8.1% had hepatitis B infection while in our study etiological investigations were sent for results but patients had poor compliance regarding these reports and OPD follow up.

In study of Robert John Fontana[12], the risk of HEV infection in adult Americans with acute liver failure the mean age was 41.8 years while in our study no patient went into fulminant hepatic failure. The Anti-HEV were present in 0.4 % population of acute liver failure but in our study, the percentage of patients likely to have Anti-HEV were higher.

In the study of Fontana R[13], the author showed that the virus is mainly transmitted via feco-oral route and water borne epidemics are characteristic of hepatitis E virus infection in developing countries as in our studies.

In the study of Park W[14], the author showed that the hepatitis E infection is recognized as highly prevalent infection in humans. The infection is mediated by the consumption of contaminated water and under cooked meat. In our patients source of infection was also contaminated water and food.

In the study Kuniholm M[15], the author studied the prevalence of hepatitis E virus infection in HIV co-infected patients but no patient was HIV positive in our study.

The study of Waheed ul Zaman[16] showed 40 % cases of acute hepatitis were positive for Anti HAV IgM.

The limitation of our study was poor patient follow up due to uneducated patient class and lack of financial resources to perform viral hepatitis markers. That is why etiology of hepatitis could not be identified.

CONCLUSION

Acute Hepatitis is more prevalent in young males. Jaundice, Dark Urine, Nausea, Anorexia and Fatigability are most common symptoms. The Morbidity and mortality of acute hepatitis is very low. Outside eating and municipal water drinking are major risk factors. The need for ICU and Liver transplant is very low. Blood transfusion, Tattooing and Ear Piercing are not risk factor of acute hepatitis. Acute hepatitis usually dost not alter PT, Albumin and scrum electrolyte.

REFERENCES

1. Butt AS, Sharif F. **Viral hepatitis in Pakistan: Past, present, and future.** Euroasian J Hepatogastroenterol. 2016; 6(1):70–81.

2. Butt AS. **Epidemiology of viral hepatitis and liver diseases in Pakistan: Past, present, and future.** Euroasian J Hepatogastroenterol. 2015; 5(1):43–48.

3. Korsman S, Hardie D, Kaba M. **Hepatitis E virus in patients with acute hepatitis in Cape Town, South Africa, 2011.** SAMJ: South African Medical Journal. 2019; 109:582-3.

4. Wu J, Guo N, Zhu L, Zhang X, Xiong C, Liu J, et al. **Seroprevalence of AIH-related autoantibodies in patients with acute hepatitis E viral infection: A prospective case-control study in China.** Emerg Microbes Infect. 2020; 9(1):332-40.

5. Nonaka K, Matsuda Y, Kakizaki M, Takakuma S, Hamamatsu A, Sakashita Y, et al. **Acute liver failure associated with influenza a virus infection: An autopsy case report.** Jpn J Infect Dis. 2019; 72(5):347-9.

6. Foster M, Ramachandran S, Myatt K, Donovan D, Bohm S, Fiedler J, et al. **Hepatitis A Virus Outbreaks Associated with Drug Use and Homelessness - California, Kentucky, Michigan, and Utah, 2017.** MMWR Morb Mortal Wkly Rep. 2018; 67(43):1208-10.

7. Harritshoj LH, Theilgaard ZP, Mannheimer E, Midgley SE, Chiduo M, Ullum H, et al. **Hepatitis E virus epidemiology among HIV-infected women in an urban area in Tanzania.** Int J Infect Dis. 2018; 73:7-9.

8. Melgaço JG, Gardinali NR, de Mello VDM, Leal M, Lewis-Ximenez LL, Pinto MA. **Hepatitis E: Update on prevention and control.** Biomed Res Int. 2018; 2018:5769201.

9. Hartl J, Wehmeyer MH, Pischke S. **Acute hepatitis E: Two sides of the same coin.** Viruses. 2016; 8(11) 299.

10. Chen N-Y, Liu Z-H, Shie S-S, Chen T-H, Wu T-S. **Clinical characteristics of acute hepatitis A outbreak in Taiwan, 2015–2016: Observations from a tertiary medical center.** BMC Infectious Diseases. 2017; 17(1):441.

11. Hasan G, Assiri A, Marzuuk N, Daef E, Abdelwahab S, Ahmed A, et al. **Incidence and characteristics of hepatitis E virus infection in children in Assiut, Upper Egypt.** J Int Med Res. 2016; 44(5):1115-22.

12. Fontana RJ, Engle RE, Scaglione S, Araya V, Shaikh O, Tillman H, et al. **The role of hepatitis E virus infection in adult Americans with acute liver failure.** Hepatology. 2016; 64(6):1870-80.

13. Fierro NA, Realpe M, Meraz-Medina T, Roman S, Panduro A. **Hepatitis E virus: An ancient hidden enemy in Latin America.** World J Gastroenterol. 2016; 22(7):2271-83.

14. Park WJ, Park BJ, Ahn HS, Lee JB, Park SY, Song CS, et al. **Hepatitis E virus as an emerging zoonotic pathogen.** J Vet Sci. 2016; 17(1):1-11.

15. Kuniholm MH, Ong E, Hogema BM, Koppelman M, Anastos K, Peters MG, et al. **Acute and chronic hepatitis E virus infection in human immunodeficiency virus-infected U.S.** Women. Hepatology. 2016; 63(3):712-20.

16. Waheed-uz-Zaman Tariq, Hussain AB, Hussain T, Anwar M, Ghani E, Asad-ullah. **Hepatitis A virus infection - shifting epidemiology.** J Coll Physicians Surg Pak. 2006; 16(1):15-18.

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Hafiz Mughees Ather	Main author, Research conduct, manuscript writing.	
2	Arfan Mahmood	Conduct research manuscript writing.	
3	Affan Shahid	Conduct research manuscript writing.	
4	Mohammed Osama	Article review.	
5	Mohammad Idrees Shani	Article review, Data analysis.	