Hepatic Disorders

274. Observation of Serum Electrolytes (Na⁺, K⁺) their Therapeutic Value in Hepatic Encephalopathy

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GMC, Patiala.

A study was conducted at Rajindra Hospital, Patiala which included 50 patients who were in different stages of hepatic encephalopathy (18% in stage I, 26% in stage II, 30% in stage III and 26% in stage IV). The etiology in 20% patients was acute hepatic failure due to HBV infection, in 10% due to non-HBV infection and 70% patients had underlying alcoholic liver disease. Serum electrolytes (sodium and potassium) of all the patients were measured on day 1, 7 and 14. Patients with serum electrolyte values below normal were given adequate supplementation.

On admission, 4 patients had hypotension, while none of the patient had hypertonia. On 7th and 14th day, value of serum Na⁺ in surviving patients was within normal range. On admission, 2 patients had hypokalemia and 4 patients had hyperkalemia. On 7th day, 2 patients had hypokalemia but none showed hyperkalemia. On 14th day, value of serum K⁺ was within normal range in all the patients.

Mortality in 1st week was 44% (22 patients) and 28.57% (8 patients) in 2nd week. In all the patients who survived, the values of serum Na⁺ and K⁺ improved gradually and by 14th day, electrolyte values were within normal range. On comparing the electrolyte values on 1, 7th and 14th day, no statistically significant difference was found among the surviving patients. Comparison of serum Na⁺ and K⁺ between patients who survived and those who expired showed statistically significant difference.

It was concluded that mortality was higher in 1st week especially in patients with higher grade of hepatic encephalopathy and with marked deviation of serum Na⁺ and K⁺ level from normal. The levels of serum Na⁺ and K⁺ should be regularly monitored in patients of hepatic encephalopathy.

280. Prevalence of Hepatitis B and C Among Health Care Workers in AIIMS

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Aim : To study the prevalence of Hepatitis B and C among Health Care Workers (HCW) in AIIMS hospital.

Method : It was a cross sectional study of 2 years duration (2001-2003). Blood samples were collected from high risk HCW group in AIIMS. HBsAg and anti-HCV were tested in 330 HCWs of AIIMS with informed consent. Different subgroups of HCW were included in the study; they are Doctors 130 (39.4%), Medical students 108 (32.7%), Nurses 50 (15.2), Technician 21 (6.4%) and Class ‘D’ Employee 21 (6.4%). Out of 330 HCW 235 (72.1%) were male and 95 (28.8%) were female. The age range was between 18-50 years (25.82 ± 5.56).

Result : HBsAg was positive in 4 HCWs (1.21%) which included one Doctor, two technicians and one class D employee Anti-HCV was positive in 3 HCWs (0.91%), doctors 2 (1.5%), Nurses 1 (2%) and there was non-positive in medical students, technicians and class D employee. Analyzing separately different HCW groups revealed the prevalence of Hepatitis B was high in Technicians (9.52%) and class D employee (4.76%). High prevalence of Hepatitis C was found in doctors (1.5%) and nurses (2%).

Conclusion : Overall prevalence of HBV/HCV was found to have 2.12%. Hepatitis B was 1.21% and Hepatitis C 0.91%. There were 81.8% of HCW immunized with Hepatitis B vaccine.

281. Surveillance of Hepatitis B Virus in Sewage and Drinking Water : Prevention Strategies Against Infection on a Resettlement Colony of Delhi

R Singhal, P Kar, RK Gupta
LHMC and MAMC, Delhi.

Introduction : Hepatitis E Virus (HEV) infection is a major cause of water borne hepatitis. Water contamination with sewage is found to be common cause in many epidemic investigations.

Objectives : 1. To study the incidence of HEV as etiological factor for sporadic cases of viral hepatitis in the community. 2. To study the incidence of HEV in drinking and sewage water by serology and polymerase chain reaction (PCR).

Methods : A prospective study was carried out in Gokulpuri, resettlement colony of Delhi, having population of approximately 25,000 during a period of 3 years (Apr 2000 to Mar 2003). A total of 141 cases of viral hepatitis were studied. Assessment of subjects was made on the basis of history, clinical examination and liver function tests. The serum samples were tested for HBsAg, IgM and HBc, HBeAg, IgM anti HAV, Anti HCV and IgM and HEV. PCR was performed in serum of all 141 samples following RNA extraction and reverse transcription by using the following primer sequence.

3043-5’ - CCG CAT CCA CAC ACA TCT GAG CTA CAT TCG TGA GCT 3’
3044-5’ - CCG AAT TCA AAG GCA TCC ATG GTG TTT GAG ATT GAC 3’

PCR was also performed in sewage and drinking water samples of all the cases.

Results : A total of 141 cases, 71 males (50.35%) and 70 females (49.65%) reported to urban health centre during the period of study. The age ranged from 2.5 years to 65 years and mean age was 24.98 ± 11.8 years. The mean total bilirubin, SGOT, SGPT, ALP were 3.98 ± 2.36, 74.49 ± 32.48, 76.29 ± 43.58 and 62.7 ± 104.2 respectively. HEV infection was the most common infection and was found in 36/141 (25.53%) cases serologically. Hence, 41/141 (29.08%) cases of viral hepatitis had evidence of HEV infection detected by both serology and/or RT-PCR. Hepatitis B virus infection was found in 8/141 (5.67%) while one had co-infection with HEV. HCV infection was found in 2/141 (1.42%) but both these cases were co-infected with HEV. HEV infection was detected by PCR in 6/141 (4.25%) sewage samples and 2/141 (1.42%) drinking samples. HEV RNA could not be detected from any of the 724 water samples collected from main water.
supply. The attack rate of HEV is 0.55 per thousand individuals per year in the population studied.

Conclusions:
1. HEV continues to be the commonest cause of sporadic cases of viral hepatitis seen at Gokulpuri. A substantial number of cases of viral hepatitis (65.96%) continued to be negative for all the known serological markers.
2. The drinking water samples showed evidence of HEV infection in 1.42% cases. 4.25% of the sewage samples were contaminated.
3. The attack rate of HEV infection was 0.55/thousand/year.

282. A Clinicopathological Profile of NASH at a North Indian City

MR Ajmal, I Shukla, S Ahmad, A Hasan, I Wani

Non-alcoholic steatohepatitis (NASH) is a clinico pathological syndrome, characterized by the development of histological features comparable to those induced by excessive alcohol intake without alcohol abuse. NASH is gaining significance due to its large prevalence worldwide and the potential progression to cirrhosis and hepatocellular failure. This study is an effort to know the clinicopathological profile of NASH in the region of Aligarh city.

We selected forty patients presented/referred to GE clinic JNMC, Aligarh with persistantly elevated SGPT and/or hepatomegaly in absence of viral or alcoholic liver disease. The study group comprised of 22 (55%) males and 18 (45%) females. With age ranging from 21-65 years. The commonest symptom was upper abdominal pain (85%) and second commonest symptom was fatigue/fatigue (82.5%) the commonest sign was hepatomegaly (62.5%). In our study 67.5% patients were obese/overweight, 35% were diabetic, and dyslipidemia was seen in 57.5% cases. The mean SGPT/ALT was 75.8 + 14.72 IU/L, in 57.5% cases of viral hepatitis (65.96%) continued to be negative for all the known serological markers.

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298. Study of Prognostic Factors in Spontaneous Bacterial Peritonitis in Indian Population

N Rawat, MK Bhatnagar

Lady Hardinge Medical College, New Delhi.

Object of Study: Spontaneous bacterial peritonitis (SBP) is a common complication of ascites. The purpose of this study was to evaluate the importance of serial ascitic fluid polymorph nuclear (PMN) cell count estimation in determining the duration of antimicrobial therapy in SBP.

Methodology: All patients suspected of SBP were subjected to routine investigations and the ascitic fluid and blood culture. Ascitic tap was done before the therapy (day 1), 48 hrs and then every fifth day till the final outcome of the disease. The fluid was analyzed for total protein, sugar, and the total and differential leucocytic count. All patients were started on cefotaxime 2 gm 8 hrly. The patients were divided into three groups namely (1) 0-250 cells/mm³, (2) 251-500 cells/mm³, (3) 501 cells/mm³ and above, according to the polymorphonuclear cell count at 48 hrs. The results were compared between the survivors and nonsurvivors and subjected to appropriate statistical analysis.

Results: Out of the 26 patients diagnosed of SBP, 16 (61%) patients survived and 10 (39%) did not. The ascitic fluid total leucocytic count at presentation had no prognostic significance (p=0.363) whereas that done at 48 hrs were also significant (p=0.02). The mean and the percentage change in the ascitic fluid PMN count between the first day and 48 Hrs were also significant (p=0.032), total leucocytic count in the blood (p=0.004). Total bilirubin (0.04), AST (p = 0.04) ALT (p=0.05) low serum sodium (p=0.015). Where as ALP total protein, serum albumin, INR, blood urea and creatinine were not significant. The ascitic fluid cell count at presentation was also significant (p=0.363).

Conclusion: With age ranging from 21-65 years. The commonest symptom was upper abdominal pain (85%) and second commonest symptom was fatigue/fatigue (82.5%) the commonest sign was hepatomegaly (62.5%). In our study 67.5% patients were obese/overweight, 35% were diabetic, and dyslipidemia was seen in 57.5% cases of viral hepatitis (65.96%) continued to be negative for all the known serological markers.

299. To Assess The Role of Serial Ascitic Fluid Cell Count in Treatment of Spontaneous Bacterial Peritonitis

MK Bhatnagar, N Rawat

Lady Hardinge Medical College, New Delhi.

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Conclusion: We concluded that the severity of hepatocellular damage at the time of presentation as depicted by appearance of jaundice, hepatic encephalopathy, and high values of serum bilirubin. AST, ALT are associated with a poor outcome. Low serum sodium, an early marker of renal dysfunction associated with cirrhosis also associated with a bad prognosis. The ascitic fluid cell count at presentation being insignificant, should only be used for diagnosis and not for prognosis.
Observation of Lipid Profile in Patients of Viral Hepatitis

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VSS Medical College, Burla, Sambalpur, Orissa.

32 cases of Viral Hepatitis (26 males and 6 female) in the age of 18 to 60 years were included in the study. Diseases including Malaria, Enteric Fever, Weil’s Disease, Sickle Cell disorder and extra-hepatic biliry obstruction were excluded from the study. The clinical presentation were Jaundice (100%), Fever (75%), Vomiting (59.3%), Ascites (21.8%), Hepatomegaly (53.1%) and Encephalopathy (12.5%). 29 cases HBsAg were +Ve (90.6%) 1 case HCV+ve (3.12%). Liver function shows total serum bilirubin above 24 mg% in 21 cases, ALT above 280 IU/L in 19 patients (59.3%). Lipid profile indicates : Total Cholesterol mean value 170.12 ± 31.57 mg%, serum triglyceride mean value 22.6 ± 5.09 mg%, VLDL mean value 28.8-32.8 mg% mean HDL 113.23 ± 32.6 mg%, VLDL mean value 33.94 ± 2.97 mg%, LDL-C mean value 170.12 ± 31.57 mg%, serum triglyceride mean value 170.12 ± 31.57 mg%.

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A Study of Plasma Homocysteine Levels in Patients of Chronic Liver Disease

M Chandra, CG Agrawal, R Mishra, A Ghatak, AK Srivastava, B Singh
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Introduction and Aims : Chronic liver disease, irrespective of its etiology, is a very common condition seen in developing countries. The exact mechanism and treatment is still not available. Role plasma homocysteine have been documented in patients of vascular disorders, ischemic heart disease and chronic renal failure. Lately, role of homocysteine have been studied in patients of chronic liver disease. However the reports are scanty and therefore we conducted the present study.

Material and Methods : Cases of chronic liver disease were diagnosed on the basis of history, clinical examination, ultrasonography findings and documented esophageal varices on upper GI endoscopy. Those with other systemic diseases were excluded from study. Total 30 cases of chronic liver disease (mean age 46.3 ± 8.1, maximum in the age group of 40-49 years, and with a sex distribution of, 20 male, 10 female) were included in study. Cases were further divided into alcoholic and non-alcoholic subgroups (alcoholic = 12, non-alcoholic = 18). Parameters used for comparison were etiology, severity of disease (according to Child-Turcotte-Pugh criteria) and plasma homocysteine (measured by HPLC method).

Observation and Results : Homocysteine levels were found to be elevated in 68% of patients. Homocysteine levels were significantly elevated in patients with chronic liver disease after comparing with controls [n=30] 13.44 ± 8.09 (3.09-36.57) p < 0.001 among patients, homocysteine levels were significantly elevated in patients who were alcoholic in comparison to non-alcoholic [Alcoholic (n=12) 23.04 ± 10.67 (11.39-36.57), non-alcoholics (n=18) 10.78 ± 4.22 (3.09-22.01) p < 0.001]

Conclusion : It was concluded from our study that chronic liver disease is a state of hyperhomocysteinemia and chronic alcoholism is strongly associated with elevated levels. We further conclude that (1) impaired liver function could be a novel determinant in the development of hyperhomocysteinemia and (2) a role for elevated homocysteine levels in the acceleration of liver fibrosis.

Outcome of FHF in Medical ICU

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Background : Fulminant hepatic failure (FHF) is an acute catastrophic, rapidly fatal illness that results in severe hepatocyte damage sufficient to cause rapid onset of encephalopathy and coagulopathy followed by multi-organ failure. Unlike chronic liver failure, FHF occurs in previously healthy individuals.

Aims : To study clinical profile, biochemical features, identify etiological agents and compare outcome to determine impact of these on prognosis.

Methods : All the patients admitted to Medical ICU over study period of two years and satisfying criteria for diagnosis of FHF were included. Their clinical profile, biochemical and radiological features, treatment received were studied. Extensive search was made to determine etiology. Outcome was studied comparing various groups and results were analyzed using Chi square test.

Results : Out of 48 of patients of FHF, there were 31 males and 17 females. Their age varied from 12 to 55 years (mean 26.2). Serum bilirubin ranged from 5.6 to 48.4 mg% (mean 17.7).
Universal vaccination against hepatitis A virus (HAV) has been becoming the major determinant of disease severity. Therefore years age group. The age at which hepatitis A infection is acquired to an increased incidence of symptomatic disease in the 18-40 changing, with transition from asymptomatic childhood infection endemicity and reduced acquired immunity to hepatitis A infection, the clinical pattern of acute hepatitis A infection is unknown - 2). Maximum numbers of cases were found in the 3rd mortality was 4 (2.2%) cases (Hepatitis A-1, Hepatitis B - 1 and Hepatitis A - 6, Hepatitis B - 2 and Hepatitis E - 1 and unknown -2) and acute fulminant hepatitis was found in 11 cases (Hepatitis A - 6, Hepatitis E - 2 and unknown -1) and mortality was 4 (2.2%) cases (Hepatitis A-1, Hepatitis B - 1 and unknown - 2). Maximum numbers of cases were found in the 3rd decade (41%) followed by 2nd decade (31.5%).

It was seen that the most common etiologic agent was Hepatitis A virus followed by Hepatitis E virus in this region.

### 324. Increasing Trend of Acute Hepatitis A in North India : Need for Identification of High-Risk Population for Vaccination


Background : In view of changing epidemiology, decreasing endemicity and reduced acquired immunity to hepatitis A infection, the clinical pattern of acute hepatitis A infection is changing, with transition from asymptomatic childhood infection to an increased incidence of symptomatic disease in the 18-40 years age group. The age at which hepatitis A infection is acquired becomes the major determinant of disease severity. Therefore Universal vaccination against hepatitis A virus (HAV) has been suggested for children. Vaccination has also been advised for patients with chronic liver diseases as HAV superinfection in these patients can result in severe or even fatal disease. In India, the indications for HAV vaccination are not clear due to contradictory seroepidemiological data of HAV infection in children and adults, as well as lack of data on HAV seroprevalence in patients with chronic liver disease.

Methods : Sera were collected from patients of acute and chronic liver disease attending the Medical Outpatient Department of Lok Nayak Hospital during 1999-2003. The sera were tested for various serological markers of acute (HBsAg, HBeAg, anti-HAV, HEV-IgM, and HAV-IgM) and chronic (HBsAg, HBeAg, and anti-HCV) hepatitis. Three hundred patients were diagnosed to have either chronic hepatitis due to hepatitis B, C, mixed infection, or alcoholism. The sera of chronic hepatitis were also tested for IgG anti-HAV antibody.

Results : 218 (12.6%) out of 1733 patients were tested positive for HAV-IgM. The age of these patients ranged between 1-72 years. The overall distribution of HAV-IgM cases increased from 6.06% to 17.4%. Although occurrence of HAV cases among children had increased (3.9% to 9.6%) in the past 5 years, the important observation was the simultaneous increased incidence of HAV infection (2.1% to 7.7%) also among the adults during the period 1999-2003. A total of 300 patients of chronic liver diseases comprising 169 HBV DNA, 73 HCV RNA, 10 mixed infection positive, and 48 Alcoholics were tested for the presence of IgG anti-HAV antibody. Most interestingly 98% (294/300) of them had IgG anti-HAV antibody in their sera.

Conclusions : Although at this moment universal vaccination against hepatitis A is not indicated, selective vaccination of the target population, particularly those belonging to the high socioeconomic strata, based on serological screening of IgG anti-HAV would be a more rational and cost effective approach.
<table>
<thead>
<tr>
<th>All patients</th>
<th>0 day</th>
<th>30 day</th>
<th>90 day</th>
<th>30 day</th>
<th>90 day</th>
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</thead>
<tbody>
<tr>
<td>S. bilirubin</td>
<td>2.5±1</td>
<td>2.0±1</td>
<td>1.1±0.5</td>
<td>2.3±1</td>
<td>2.0±3</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>AST</td>
<td>60±5</td>
<td>52±5</td>
<td>35±5</td>
<td>56±5</td>
<td>46±5</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>ALT</td>
<td>105±5</td>
<td>98±5</td>
<td>38±5</td>
<td>70±5</td>
<td>52±5</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>GGT</td>
<td>200±350</td>
<td>130±25</td>
<td>45±10</td>
<td>180±25</td>
<td>100±10</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>U/S grade of steatosis</td>
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<td>+2</td>
<td>0 or 1</td>
<td>+2</td>
<td>+2</td>
<td>&lt; 0.05</td>
</tr>
</tbody>
</table>

During this study Metadoxin was found to be well tolerated. Only two patients developed diarrhea but they were able to complete the regimen after a brief stopping of the drug. Thus Metadoxin has been found to be effective therapeutic agent for rapid clinical, biochemical and sonographic normalization of early alcoholic liver disease.

*Adjudged Best Papers and got an award of Rs. 1000/- each from Chairman Scientific Committee, Diamond APICON 2005.