LIVER DiSORDERS IN CHILDREN

Pages with reference to book, From 62 To 64

Aisha Mehnaz, A. Gbaffar Billo, Sarwar J. Zuberi (Department of Paediatrics, Civil Hospital and PMRC Research Centre, Jinnah Postgraduate Medical Centre, Karachi.)

Abstract

Retrospective analysis of 300 children with various liver diseases, seen at two major teaching hospitals of Karachi indicates that acute viral hepatitis and its sequelae are the commonest of all hepatic ailments. Their frequency, clinical presentation, biochemical findings and outcome are presented (JPMA 40 : 62, 1990).

INTRODUCTION

Among the paediatric health hazards liver disorders bear a considerable magnitude and have a high morbidity and mortality. Scarcity of published data on liver diseases in children prompted us to retrospectively review the cases seen in our departments to determine their pattern, frequency, presentation and outcome.

PATIENTS AND METHODS

Three hundred children were included in this study, 152 from the department of Paediatrics Civil Hospital and 148 from PMRC Research Centre, Jinnah Postgraduate Medical Centre, Karachi. Their ages varied from one month to 14 years. History and physical findings of each case were entered on a proforma. Complete blood picture, prothrombin time, serum bilirubin, alkaline phosphatase, ALT and urinalysis were done. Serum proteins, Electrolytes, liver biopsy, ultrasonography, upper G.I. endoscopy, alphafoetoprotein, Casoni's test, microscopy and culture of pus from liver abscess were done where indicated. Hepatitis B surface antigen was done in 25% cases.

RESULTS

Pooled data from the two centres was analysed. Acute viral hepatitis together with acute fulminant hepatitis accounted for 42% of the total cases, 29% had cirrhosis, 8% liver abscess and 5% suspected storage disorders (Table I).

TABLE I. Liver Disorders in Pediatric Age Groups at two Centres.

No.	Diagnosis	Male		Female		Total	%
		No.	%	No.	%		
1.	Acute viral hepatitis	67	(72)	26	(28)	93	31
2.	Cirrhosis	56	(65)	30	(35)	86	28.7
3.	Fulminant hepatic failure	22	(61)	14	(39)	36	12
4.	Hepatic abscess	10	(41.7)	14	(58.3)	24	8
5.	Storage disorders	10	(71.4)	4	(40)	14	4.7
6.	Portal hypertension	6	(60)	4	(28.6)	10	3.3
7.	Wilson's disease	4	(50)	4	(50)	8	2.7
8.	Neonatal hepatitis	3	(37.5)	5	(62.5)	8	2.7
9.	Congenital familial	5	(83.3)	11	(16.7)	6	2
10.	Malignant neoplasms	5	(100)	–	5	1.6	
11.	Chronic persistent hepatitis	1	(33.3)	2	(66.7)	3	1.0
12.	Biliary atresia	2	(50)	2	(50)	4	1.3
13.	Hydatid cyst	1	(100)	–	1	0.3	
14.	Alpha-1-antitrypsin deficiency	1	(100)	–	1	0.3	
15.	Congenital hepatic fibrosis	1	(100)	–	1	0.3	

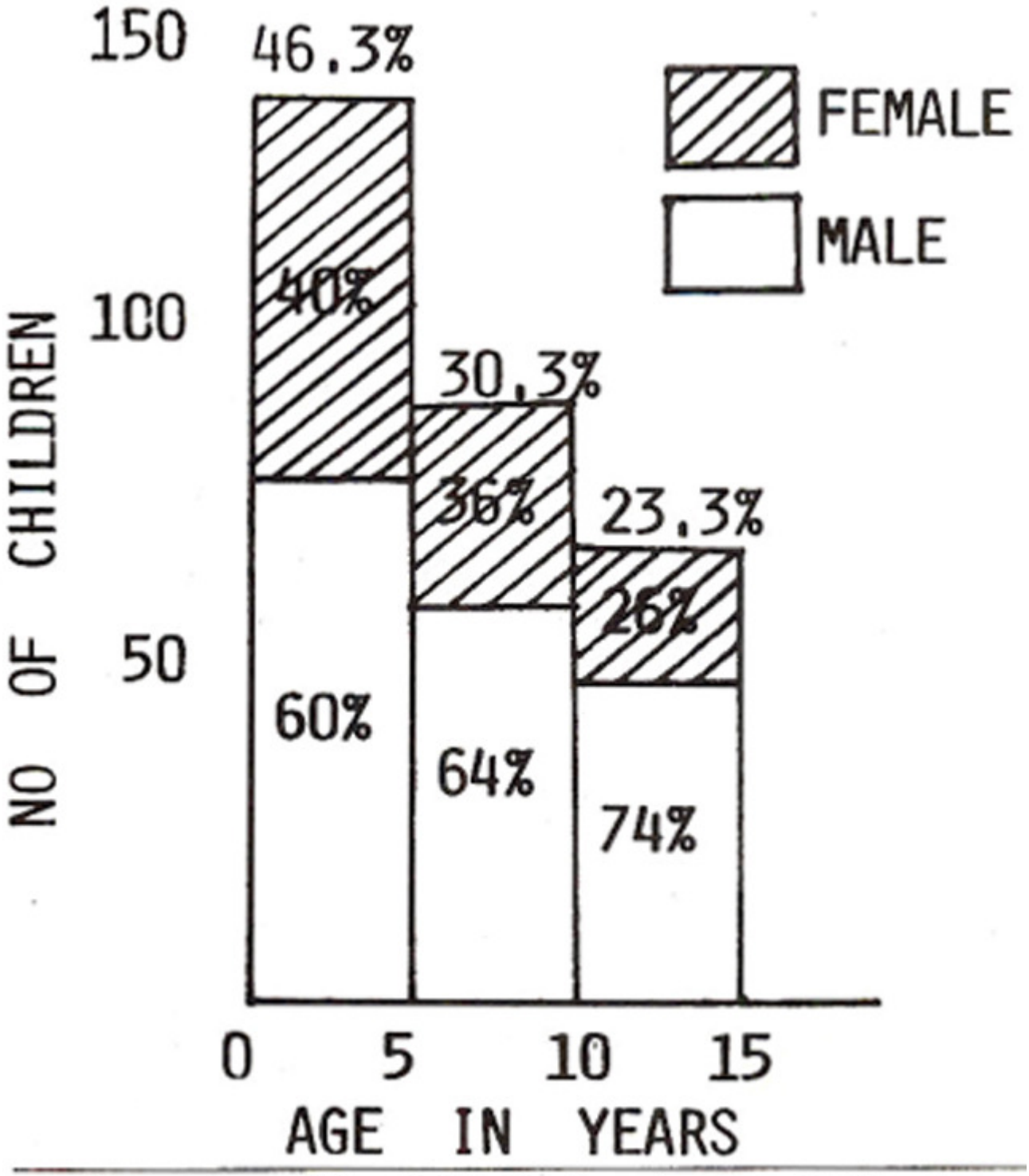

Figure. Age and Sex distribution in various hepatic disorders.

CLINICAL MANIFESTATIONS

Fever (76%), jaundice (75%) and hepatosplenomegaly(72%) were the most frequent presentations of infective liver disorders. Fulminant hepatic failure and hepatic encephalopathy was seen in 18% cases. Patients with non-infective disorders presented with jaundice (42%), hepatosplenomegaly (56%), nausea, vomiting, diarrhoea, and abdominal pain. Mental retardation was noted in 16% cases (Table II).

TABLE II. Common Clinical manifestations seen in Liver Disorders.

Sign and Symptoms	Infective liver disorders		Non-infective liverdisorders	
	No	(%)	No.	(%)
Fever	193	(75.6)	11	(24.4)
Jaundice	190	(74.5)	19	(42.2)
Hepatosplenomegaly	183	(71.8)	25	(55.5)
Splenomegaly	32	(12.5)	–	
Nausea/Vomiting	119	(46.7)	04	(8.8)
Abdominal pain	79	(31)	05	(11.1)
Abdominal Distension	69	(27)	15	(33.3)
Ascites/Oedema	69	(27)	09	(20)
Diarrhoea	67	(27.6)	09	(20)
Constipation	14	(5.5)	–	
Anemia	81	(31.8)	07	(15.5)
G.I. Bleeding	65	(24.5)	–	
Coma	45	(17.6)	–	
Mental Retardation	–	07	(15.5)	

NUTRITIONAL STATUS

Malnutrition was not a pre-disposing factor in the acute and chronic liver disease (Table III).

TABLE III. Nutritional status of Children in common Liver Disorders (using GOMEZ classifications).

Diseases	Normal %	Grade I %	Grade II %	Grade III %
Acute Viral Hepatitis	50	29.7	12.2	8.1
Cirrhosis	45.5	27.7	30.8	0
Acute Fulminant Hepatitis	55	20	10	15
Hepatic Abscess	45	20	30	1
Storage Disorders	33.3	25	25	16.7

Biochemical profile in various disorders is shown in Table IV.

TABLE IV. Liver Functions Test in some Liver Disorders

Diseases	Serum Bilirubin (mg/ml) Mean (Range)	SGPT (u/l) Mean (Range)	Alkaline PO4 u/l Mean (Range)
Acute Viral Hepatitis	10.31 (0.7 – 56.6)	576 12.85 – 5184)	229.71 (9.15 – 1285)
Acute Fulminant Hepatitis	7.63 (0.4 – 25.6)	1009.34 (52 – 5600)	513.76 (12 – 1590)
Hepatic Abscess	2.4 (0.3 – 33.0)	65 (11 – 161)	222.75 (12 – 730)
Cirrhosis	5.95 (0.3 – 36.6)	118.4 (10 – 1089)	134.67 (3.3 – 505)
Storage Disorders	3.54 (0.4 – 13.3)	196.8 (10 – 572)	107.06 (9.6 – 530)
Wilson's Disease	6.7 (0.6 – 23.3)	283.1 (20 – 1510)	81.37 (43 – 230)

All cases of acute viral hepatitis admitted in Civil Hospital improved while 78% cases of acute fulminant hepatitis died. Twenty four per cent cases of cirrhosis developed hepatic encephalopathy and died. Liver abscesses were mostly amoebic and recovered after appropriate therapy. The overall mortality in Civil Hospital from liver disease was 26% (Table V).

TABLE V. Prognosis of Liver Disorders in Children admitted at Dept. of Paediatrics C.H.K.

Diseases	No Std (%)	Imp/ Rec (%)	Sta (%)	Exp (%)	Lama (%)
Acute Viral Hepatitis	43 (100)	43	–	–	–
Acute Fulminant Hepatitis	36 (14)	05	–	28 (78)	30 (8)
Cirrhosis	25		15 (60)	06 (24)	04 (16)
Liver Abscess	24 (100)	24	–	–	–
Storage Disease	07	–	07 (100)	–	–
Neonatal Hepatitis	07 (28.6)	02	–	02 (28.6)	03 (42.8)
Biliary Atresia	03		01 (33)	–	02 (66.7)
Malignant neoplasma	02			02 (100)	–
Benign Familial Intrahepatic cholestases	02 (100)	02	–	–	–
Criggler Naffar Type II	01 (100)	01	(100)	–	–
Hydatid Cyst	01 (100)	01	–	–	–
Alpha – 1 Antitrypsin Deficiency	01	–	–	01 (100)	–
	152 (51.3)	78	23 (15)	39 (25.7)	12 (8)

Neoplasms had the worst prognosis.

DISCUSSION

Acute viral hepatitis was the most common liver disorder in children. Of various types, hepatitis A and Non A - Non B were seen in 54% and 30% of cases respectively. A similar incidence has been reported in Indian children[2]. Most of the epidemics of viral hepatitis in the third world are due to contamination of water. Similar mode of transmission is suggested in Pakistan[1,3]. In this study a history suggestive of parenteral transmission or a close contact with hepatitis patients or carries was obtained in only 19.3% of the cases suggesting orofaecal transmission in the remaining cases. Age and sex distribution in this study was similar but liver function derangement was less marked in the study reported from Rawalpindi. HBsAg positivity was 37% in the present series and 6.6% in other series[1] (Table VI).

TABLE VI. Comparison of Epidemiology and Biochemical Profile.

	Present study	Malik et al[1]
Total Cases Studied	93	91
Sex		
Male/Female	67/26	61/30
Ratio	1:8:1	1.9:1
Age		
< 6 years	43 (46.2%)	54 (59.3%)
6–12 years	32 (34.4%)	30 (33%)
> 12 years	18 (19.3%)	07 (7.7%)
Seasonal Prevalence	Early spring & summer	Late summer & winter
History of contact	19.3%	17.6%
L.F.T.		
S. Bilirubin	10.3mg/dl	4.25 mg/dl
SGPT	576 U/L	94.145 U/L
Alkaline PO4	229.7 U/L	112.02 U/L
HBs Ag	Done in 24 Positive in 37.5%	Done in all Positive in 6.6%

Amoebic liver abscesses were also frequent in children. Metabolic and storage disorders were suspected in 4.6% of cases which may be due to a high incidence of consanguinous marriages in this country. Overall mortality from liver disease at the department of Paediatrics, Civil Hospital, Karachi was 26% as compared to 6.6% in United States[4]. To determine the actual pattern of liver disease in children a more detailed prospective, clinico epidemiological study with complete serology, biopsy and special tests for metabolic and storage disorders is needed in our country.

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