

Experience of liver disease at a University Hospital in Western Saudi Arabia

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ABSTRACT

Objective: The aim of this retrospective study is to review the pattern of hepatic diseases seen in our setting at King Abdul-Aziz University Hospital, Jeddah, Kingdom of Saudi Arabia and to assist us in appreciating the hepatic prototype in our region.

Methods: Our study consisted of 246 consecutive liver biopsies. Lesions were studied considering histological type, age and gender of the patients and anatomic location. Distribution of hepatic lesions were classified into 4 categories as 1. Chronic inflammatory lesions, 2. Cirrhotic lesions, 3. Neoplastic hepatic lesions and 4. Pediatric and hereditary hepatic lesions.

Results: Chronic inflammatory lesions comprised of 123 (50%) cases (mean age 38.1), most commonly reported being chronic hepatitis 82 cases (33.3%, mean age 42). Among these patients with chronic hepatitis, 59 cases were positive for hepatitis C virus (HCV), 21 cases were positive for hepatitis B virus (HBV) and 2 cases had both HCV and HBV. Twenty cases were diagnosed with cirrhosis (mean age 38.2). Among these cirrhotic lesions 16 cases were positive for HCV, 4 cases were positive for

HBV. Neoplastic lesions were mostly malignant and comprised of 41 (15.5%) cases (mean age 44.7), with only one benign lesion diagnosed as benign hemangioma (age 48 years). Among malignant lesions, the majority were metastatic lesions, 18 were adenocarcinoma metastasis, all with primary from the gastrointestinal tract (mean age 46.6) and 12 with lymphomatous metastasis (mean age 41.2). There were 10 cases of hepatocellular carcinoma (mean age 43). Pediatric hepatic lesions comprised of 35 (14.2%) cases with the most common lesion being extrahepatic bile duct obstruction in 6 cases (mean age 2 months).

Conclusion: Chronic active hepatitis was the most common inflammatory lesion, metastatic carcinoma was the most common neoplastic lesion and extrahepatic bile duct obstruction was the most common pediatric lesion of the liver.

Keywords: Chronic hepatitis, hepatocellular carcinoma.

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The liver is vulnerable to a wide variety of metabolic, toxic, microbial, circulatory, and neoplastic insults. In some instances, the disease is primary to the liver, as in viral hepatitis and hepatocellular carcinoma. More often the hepatic involvement is secondary, often to some of the most common diseases in humans, such as cardiac decompensation, disseminated cancer, alcoholism, and extrahepatic infections. The enormous functional reserve of the liver masks to some extent the clinical impact of early liver damage. However, with

progression of diffuse disease or strategic disruption of bile flow, the consequences of deranged liver function become life threatening.¹ However imaging techniques have now enabled the liver and biliary tree to be visualized with precision, resulting in earlier diagnosis. Therapeutic endoscopy, laparoscopic and minimally invasive surgery, avoids the necessity for major surgery, particularly for biliary tract disease. Finally, liver transplantation has brought about a revolution in the treatment of chronic liver diseases.² The distribution of hepatic

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diseases is not well reported in the Kingdom of Saudi Arabia (KSA). This study led us to analyze 246 liver biopsies, in the Department of Surgical Pathology, King Abdul-Aziz University Hospital (KAUH), Jeddah, KSA during the time frame of 4 years from January 1997 to December 2000.

Methods. Data was collected from the surgical pathology files of the histopathology section of the Pathology Department at KAUH. The study included all cases of liver biopsies diagnosed during the 4-year period from 1997 to 2000. Cases were then characterized according to their histological subtypes, age, sex and anatomic location of the lesions. Distribution of hepatic lesions was classified into 4 categories as 1) chronic inflammatory lesions, 2) cirrhotic lesions, 3) neoplastic hepatic lesions and 4) pediatric and hereditary hepatic lesions. Mean age and male to female ratio were derived for the 4-groups and for each individual lesion.

Results. Of the cases studied 145 (58.9%) were male and 101 (41.1%) were female, giving a male to female ratio of 1.4:1. With regard to the age

Table 1 - Summary of normal and chronic inflammatory and cirrhotic lesions with their sex distribution and mean ages of presentation.

Diagnosis	Mean Age	Total	Gender	
			Male	Female
Normal	36.5	27	23	4
Severe fatty changes	31.6	9	7	2
Reactive hepatitis with minimal change	36.5	7	4	3
Chronic hepatitis	42	82	50	32
Active cirrhosis	38.2	20	9	11
TB	42.1	6	2	4
Granulomatous hepatitis	32.8	8	5	3
Bile duct obstruction	32.4	2	2	-
Extramedullary hematopoiesis	38.9	1	-	1
Hydatid cyst	31.8	2	-	2
Bilharzial periportal fibrosis	30.2	2	2	-
Hemosiderosis	55	1	1	-
Portal fibrosis with paucity of bile duct	31.7	3	2	1
	38.1	170	107	63
TB - tuberculosis				

distribution of these patients 14.2% presented under 19 years, 11.4% presented in the 3rd decade, 26% presented in the 4th decade, 22.8% presented in the 5th decade, 12.6% presented in the 6th decade, 9.3% presented in the 7th decade and 3.6% patients presented above 70 years. There were more men (56%) than women (44%) affected by malignant lesions, but other benign lesions and chronic hepatitis were equally distributed between the 2 sexes. A summary of the lesions with their sex distribution and mean ages of presentation is summarized in **Tables 1, 2 & 3**. Chronic inflammatory lesions comprised 123 (50%) cases (mean age 38.1), the most commonly reported being chronic hepatitis 82

Table 2 - Summary of malignant hepatic lesions with their sex distribution and mean ages of presentation.

Diagnosis	Mean age	Total	Gender	
			Male	Female
Benign hemangioma	48	1	-	1
Hepatocellular carcinoma	43	10	8	2
Lymphomatous metastasis	41.2	12	5	7
Adenocarcinoma metastasis from GIT	46.6	18	10	8
Total	44.7	41	23	18
GIT - gastrointestinal tract				

Table 3 - Summary of pediatric and hereditary hepatic lesions with their sex distribution and mean ages of presentation.

Diagnosis	Mean age	Total	Gender	
			Male	Female
Normal	1.6 years	3	1	2
<i>Congenital anomalies and obstruction of biliary tract</i>				
Intrahepatic paucity of bile duct	5 months	1	-	1
Intrahepatic biliary atresia	1 month	3	-	3
Extrahepatic bile duct obstruction	2.1 months	6	-	6
<i>Inflammatory lesions</i>				
Cholestatic hepatitis with fatty change	1 year	6	4	2
Granulomatous hepatitis	4.5 years	5	3	2
Chronic active hepatitis	8.2 years	5	1	4
Cirrhosis	8.4 years	4	-	4
<i>Metabolic disorders</i>				
Alpha 1 antitrypsin deficiency	9 years	1	-	1
<i>Pediatric neoplasms</i>				
Hepatoblastoma	11 months	1	-	1
Total		35	9	26

cases (33.3%, mean age 42). Among these patients of chronic hepatitis, 59 cases were positive for Hepatitis C virus (HCV), 21 cases were positive for Hepatitis B virus (HBV) and 2 cases were positive for both HCV and HBV. Chronic hepatitis patients were morphologically diagnosed as chronic active hepatitis in 60 cases (mean age 45), chronic persistent hepatitis in 17 cases (mean age 40.3) and chronic hepatitis with prominent fatty change in 5 cases (mean age 31.6). Another significant diagnosis was granulomatous hepatitis with 14 cases. Six of these lesions were confirmed as tuberculous hepatitis (mean age 42.1, male to female ratio 1:2). Twenty cases (8.1%) were diagnosed as cirrhosis (mean age 38.2). Among these cirrhotic lesions 16 cases were positive for HCV, 4 cases were positive for HBV. Neoplastic lesions were mostly malignant and comprised of 41 (15.5%) cases (mean age 44.7), with only one benign lesion diagnosed as benign hemangioma (age 48 years). Among malignant lesions the majority were metastatic lesions, 18 were adenocarcinoma metastasis, all with their primary recorded from the gastrointestinal tract (mean age 46.6) and 12 with lymphomatous metastasis (mean age 41.2). There were 10 cases of hepatocellular carcinoma (mean age 43). Among the cases of hepatocellular carcinoma, 4 were positive for HBV, 2 were positive for HCV and 4 were positive for both HBV and HCV. Pediatric hepatic lesions comprised of 35 (14.2%) cases with the most common lesion being extrahepatic bile duct obstruction in 6 cases (mean age 2 months) and also 6 cases of hepatitis with fatty changes (mean age one year). There were 5 cases of granulomatous hepatitis with one case confirmed as tuberculous hepatitis (mean age 4.5 years) and 5 cases of chronic active hepatitis (mean age 8.2 years).

Discussion. Liver diseases comprise a major health problem. In one survey from the United States of America (USA) it was reported that chronic liver diseases rank as the 10th most common cause of death with 9.3 deaths per 100,000-population in the year 1998.² There were 25,192 annual deaths and 373,000 hospital discharges from chronic liver diseases in the year 1998.² Another larger survey by the National Institute of Health of the United Kingdom has reported a similar prevalence of chronic liver disease and cirrhosis with a prevalence of 400,000 people (1976-1980), mortality of 26,050 deaths (1987), hospitalizations of 300,000 (1987), physician office visits of one million (1985) and disability of 112,000 people (1983-1987).³ The specific incidences of viral hepatitis as reported by the USA are: hepatitis B 200,000 to 300,000 new cases 1990; hepatitis C 150,000 new cases 1991; and hepatitis D 70,000 new cases (1990).⁴ Although in the West, alcohol is the major cause of liver disease, whilst elsewhere the hepatitis B and C virus are still a significant factor. It is expected that patterns of liver diseases should differ from the West because of different risk factors involved in our population.

Alcohol abuse is not a major problem in our population.⁵ There are few local studies describing the pattern of liver diseases in KSA. In one study Fahsir et al⁶ from the Security Forces Hospital, Riyadh reported a study of 227 adult liver biopsies with age range of 16-85 years. The most common histological diagnoses in his study were: cirrhosis in 22.3%, chronic active hepatitis (CAH) 16.6%, hepatocellular carcinoma (HCC) in 7.2%, fatty changes in 12% of patients. Other less common diagnoses in the study were: cholestasis in 8 (2.8%), hemochromatosis in 7 (2.5%), periportal fibrosis in 4 (1.4%), Wilson's disease in 3 (1%), alcoholic hepatitis in one patient and lymphoma in one patient. Inadequate specimens were encountered in 7 (2.5%). The most common causes of liver cirrhosis were: HCV in 73.3% of patients tested and HBV in 23.2%. In our study cirrhosis was found in 8.1% of adult liver biopsies, chronic hepatitis was diagnosed in 33.3%, hepatocellular carcinoma was diagnosed in 5% and fatty change was diagnosed in 6.8% of adult patients. The distribution of HBV and HCV was quite similar to the above-mentioned study. Among patients with chronic hepatitis 59 cases (71.9%) were positive for HCV, 21 (25.6%) cases were positive for HBV and 2 cases (2.4%) had both HCV and HBV. Among patients with cirrhosis, 16 cases were positive for HCV, 4 cases were positive for HBV. Among the 10 cases of hepatocellular carcinoma 4 were positive for HBV, 2 were positive for HCV and 4 were positive for both HBV and HCV. In another study by Coode⁷ from the National Guard Hospital, Jeddah reported HBV prevalence in liver biopsies from 228 patients. He found that autoimmune liver disease and alcoholic cirrhosis were rare in this community and for both the chronic active hepatitis and the cirrhosis cases, 20% had evidence of chronic hepatitis B infection. In a population known to have a chronic hepatitis B carrier prevalence of about 7%, this figure was unexpectedly low, though the findings are in accord with some other published series. There have been significant variations in different reports. For the hepatocellular carcinoma cases, 62% were hepatitis B surface antigen positive. He also suggested that in many cases of serious chronic liver disease in this community, the etiology remains unknown.

In conclusion, this study reports the pattern of hepatic lesions in this area. Although this was a rather simple analysis the intention is also to open the way for other larger and more clinically oriented studies. To define the risk factors in our population a large-scale study including all regions of the Kingdom looking at specific etiological factors and comparing them to other Arab and Western countries is highly recommended.

References

1. Corton R, Kumar V, Collins T. Pathological Basis of disease. 6th ed. Philadelphia (PA): WB Saunders Company; 1999. p. 880-809.

2. Kumar P, Clark M. Clinical Medicine. 4th ed. Philadelphia (PA): WB Saunders Company; 1998. p. 307-320.
3. Rappaport AM, Wanless IR, Schiff ER. Diseases of the Liver. 7th ed. Philadelphia (PA): JB Lippincott; 1993.
4. Steinke DT, Weston TL, Morris AD, MacDonald TM, Dillon JF. Epidemiology and economic burden of viral hepatitis: An observational population based study. *Gut* 2002; 50: 100-105.
5. Carithers RL Jr. Alcoholic hepatitis and cirrhosis. In: Kaplowitz N, editor. Liver and Biliary Diseases. Baltimore (MD): Williams & Wilkins; 1992. p. 334-346.
6. Fashir B, Sivasubramaniam V, Al-Momen S, Assaf H. Pattern of Liver Disease in a Saudi Patient population: A Decade Of Experience At Security Forces Hospital, Riyadh, KSA. *Saudi Journal of Gastroenterology* 1996; 2: 50-52.
7. Coode PE, Hossain J, Ibrahim MB. Hepatitis B Virus Prevalence In A Liver Biopsy Series In Jeddah, Saudi Arabia. *Saudi Med J* 1993; 14: 36-39.