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Research Article

ANALYSIS OF ACUTE HEPATITIS IN CHILDREN**Dr Rimsha Mukhtar¹, Dr Shamsheer Haider², Dr Muhammad Anees Amin³**¹Hebei North University, Zhangjiakou China^{2,3}Abbottabad International Medical College.**Article Received:** August 2020**Accepted:** August 2020**Published:** September 2020**Abstract:**

Liver is a pivotal organ of the body and play very important role in the metabolism. If there is any problem in the liver then the herbs or different plants play an important role for the treatment of liver disorders. The main objective of the study is to analyse the acute hepatitis in children. This cross-sectional study was conducted in Abbottabad International Medical College during March 2019 to December 2019. The data was collected from both genders and the sample size is 100. The age range for this study was 6 months to 10 years. Detailed history was taken from all patients with special reference to duration of hepatitis, mode of infection, previous history of jaundice, HBV or HCV infection. The data was collected from 100 patients. The mean age was 35.16 ± 24.8 months. The data suggest clearly that CD4 count decreases in abnormal liver function. The results shown the table 01 demonstrates the multiple comparison of ALT, AST and ALP level among different treatments and normal group. There were non-significant relationship present in diseased group treated with different therapies like interferon and glutathione as $p < 0.05$. It is concluded that HBV infection affected the development of children. Generally, elevated AST levels were effective, in development of children and we aimed to emphasize that this infection should be kept in mind while researching developmental anomalies.

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INTRODUCTION:

Liver is a pivotal organ of the body and play very important role in the metabolism. If there is any problem in the liver then the herbs or different plants play an important role for the treatment of liver disorders¹. There are a number of plants which shows hepatoprotective property. Hepatitis B and C viruses can lead to hepatocellular carcinoma and cirrhosis-related end-stage liver disease, which are potentially life-threatening liver diseases. Hepatitis B and C need immediate worldwide attention as the infection rates are too high. More than 240 million people globally have chronic (long-term) liver infections². Every year, about 600,000 people die because of the acute or chronic consequences of hepatitis B, and more than 350,000 people die from hepatitis C-related liver diseases worldwide².

Hepatitis is a major public health problem and is endemic throughout the world especially in tropical and developing countries. Hepatitis means inflammation of the liver. The liver is indispensable to our survival³. It has synthetic, storage and detoxification functions. An abnormal LFT may signify a serious disease that can be identified only through further testing. These conditions include liver diseases, such as primary biliary cirrhosis (PBC), diseases of other organs such as Paget's disease of bone, and multi-organ diseases such as haemochromatosis. However, the majority of people with an abnormal LFT in primary care settings will not have any such previously undetected disease⁴. They will have either no disease at all, or will be manifesting the effects of alcohol abuse or obesity. The doctor is likely to be aware, or at least suspicious, of these behaviours when ordering LFTs, but this does not exclude the presence of other diseases that may aggravate liver damage. There is thus a real question about which specific further tests, if any, a GP should order when an abnormal LFT result is obtained in a patient with non-specific symptoms, or as a result of routine testing⁵. In some cases there may be a clear indication for further tests. For example, if the patient has a family history of haemochromatosis then their iron saturation should be measured⁶.

HBV and HCV are transmitted mainly through body fluids. HBV is the most common hepatitis causing virus accounting for nearly 2 billion infections globally and around 5–10% of chronic infections among adult populations in sub-Saharan Africa and East Asia⁷. Similarly, an estimated proportion of 2.8% of the world's population representing 180 million individuals are infected with HCV. In

Ghana, HBV and HCV respectively account for about 10–15% and 3% of infections in the general population⁸. These two viruses have been implicated in the development of hepatocellular carcinoma (HCC). Whereas about 1–5% of chronic HCV sufferers are likely to develop HCC, up to 50% of HCC cases are attributed to both direct and indirect oncogenic effects of HBV.

Objectives of the study

The main objective of the study is to analyse the acute hepatitis in children.

MATERIAL AND METHODS:

This cross-sectional study was conducted in Abbottabad International Medical College during March 2019 to December 2019. The data was collected from both genders and the sample size is 100. The age range for this study was 6 months to 10 years. Detailed history was taken from all patients with special reference to duration of hepatitis, mode of infection, previous history of jaundice, HBV or HCV infection. A thorough clinical examination was carried out and stigmata of chronic liver disease, hepatosplenomegaly, ascites, etc. if present were noted.

Biochemical analysis

Blood investigation including Hemoglobin (Hb), total leucocytes count (TLC), differential leucocytes count (DLC), platelet count, X-ray chest, ultrasound abdomen and LFT were done in all patients. The LFT included serum bilirubin, aspartate aminotransferase (AST), alanine aminotransferase (ALT), serum alkaline phosphatase (SAP) and serum albumin. Abnormal values were defined as serum Bilirubin ≥ 1.5 mg/dl, ALT/AST ≥ 50 IU/ml. Each experiment was repeated three times and all data were displayed in mean \pm SD and analysed through SPSS 19.0 (IBM, USA). T-test and one-way ANOVA were applied for measuring comparison among groups. $P < 0.05$ was considered to have statistical meaning.

RESULTS:

The data was collected from 100 patients. The mean age was 35.16 ± 24.8 months. The data suggest clearly that CD4 count decreases in abnormal liver function. The results shown the table 01 demonstrates the multiple comparison of ALT, AST and ALP level among different treatments and normal group. There were non-significant relationship present in diseased group treated with different therapies like interferon and glutathione as $p < 0.05$.

Table 01: LFTs of hepatitis patients

S.O.V	Sum of Squares	df	Mean Squares	F	Sig.
ALP	15292.855	4	3823.214	18.288	.000
AST	4181.198	20	209.060	23.794	
ALT	19474.054	24		35.391	.000

Table 02: Biochemical analysis of patients in HBV

	Mean \pm SD
AST (U/L)	12 - 66 (35.2 \pm 11.1)
ALT (U/L)	9 - 113 (37.6 \pm 21)
GGT (U/L)	6 - 29 (11.7 \pm 3.8)
ALP (U/L)	71 - 491 (259.27 \pm 81.06)
Total bilirubin (mg/dL)	0.2 - 1.3 (0.22 \pm 0.1)
Direct bilirubin (mg/dL)	0.1 - 0.5 (0.22 \pm 0.1)
AFP (IU/mL)	0 - 5.4 (1.5 \pm 1.14)
IGF-1 SDS (ng/mL)	-2.27 - 6.81 (0.5 \pm 1.94)
IGFBP-3 SDS (ng/mL)	-3.83 - 2.59 (0.16 \pm 1.40)

DISCUSSION:

This study demonstrated that host and environmental factors affect the severity of liver disease in patients with acute hepatitis A. Acute hepatitis A is mostly self-limited, thus in the past, fulminant hepatitis due to hepatitis A was considered rare. However, fulminant hepatitis from HAV is increasing constantly because of low anti-HAV positivity resulting in increased number of the patients in adolescents and young adults⁹. On the other hand, prevalence of fulminant hepatitis from hepatitis B is decreasing; therefore, fulminant hepatitis from hepatitis A is increasing relatively. Damage to the structural integrity of liver is reflected by an increase in the level of serum transaminase because these are cytoplasmic in location and are released into circulation after cellular damage¹⁰.

CONCLUSION:

It is concluded that HBV infection affected the development of children. Generally, elevated AST levels were effective, in development of children and we aimed to emphasize that this infection should be kept in mind while researching developmental anomalies.

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