SUMMARY

The present work was designed to study some of autoantibodies { antinuclear antibodies (ANA), smooth muscle antibody (SMA), antimitochondrial antibody (AMA), liver kidney microsomal antibodies (LKM) and antineutrophil antibodies (ANCA)} in patients with chronic liver disease.

The present study included 60 patients with chronic liver disease selected from the Pediatric Hepatology Clinic, New Children's Hospital, Cairo University.

The patients were classified according to the etiology of chronic liver disease into three groups:-

Group (I) Autoimmune hepatitis : Included 30 patients with chronic autoimmune hepatitis. 13 were males (43.3%) and 17 were females (56.7%).

Group (II) viral hepatitis : Included 23 patients with chronic viral hepatitis , 14 (60.9%) were males and 9 (39.1%) were females. 10 had HBV, 7 of them had HCV and 6 had had both HBV and HCV.

Group (III) (Miscellaneous group) : Included 7 patients with different etiologies and hence were termed a miscellaneous group. One had Wilson's

disease, another had cystic fibrosis and the third one had venoocclusive disease. The cause in the other four patients remained cryptogenic. Four of them were males (57.1%) and three were females (42.9%) .

The study also included 24 healthy children of matched age and sex as a control group (IV).

The age of patients ranged between 1 and 16 years with a mean 8.8 $\pm$ 4.2 years, while the age of control ranged between 1 and 17 years with a mean 7.3 $\pm$ 4.5.

All cases were subjected to the following :- history taking ,thorough clinical examination, complete blood count (CBC), liver function tests (total and direct bilirubin, SGOT, SGPT, alkaline phosphatase, serum proteins and albumin), immunoglobulins, serological hepatitis markers, alpha one antitrypsin, serum copper, urinary copper after pencillamine, abdominal sonar, liver biopsy. Upper and lower endoscopy were done when needed for some patients.

All cases and controls were tested for the following autoantibodies by indirect immunofluorescence:- antinuclear antibodies (ANA), smooth muscle antibody (SMA), antimitochondrial antibody (AMA), liver kidney microsomal antibodies (LKM) and antineutrophil antibodies (ANCA) .

Immunoglobulins of IgG type were elevated in most of the cases in the three patient groups: 87%, 85.7% and 76.7% in groups (II), (III) and (I) respectively. Immunoglobulins of IgM type were elevated in 29 (96.7%), 22 (95.7%) and, 7 (100%) of groups (I), (II) and (III) respectively. IgA was elevated in 53.3%, 65.2% and 42.9% in groups (I), (II) and (III) respectively. all three Immunoglobulins Ig G, M and A were elevated in 40%, 61% and 43% in groups (I), (II) and (III), respectively. The differences were not statistically significant.

30% of patients in group (I) were ANA positive versus 26.1% in group (II) and none in group (III) with statistically significant difference compared to controls. Comparison between groups (I) & (II) revealed no statistically significant difference.

SMA were positive in 73.3% of patients in group (I), 78.3% in group (II) and 14.3% in group (III) with statistically significant difference as compared with controls. Comparing both groups (I)&(II) revealed no statistically significant difference.

AMA were only detected in one case only in both group (I) and (II).

LKM were reported in 53.3% and 56.5% in groups (I) and (II) respectively and none in group (III) with statistically significant difference as compared with controls. No statistically significant difference. was detected between groups (I) & (II).

ANCA were detected in 26.7% and 30.4% in groups (I) and (II) respectively and none in group (III) with no statistically significant difference compared with controls. Comparing both groups (I)&(II) revealed no statistically significant difference.

c-ANCA was detected in 37.5% in group (I), while, in group (II), it was present in 85.7% . p-ANCA was detected in group (I) only (62.5%). Both c &p ANCA was detected in only one case in group (II).

ANA, SMA, AMA, LKM and ANCA are present in almost similar percentages in both AIH and chronic viral hepatitis. ($p > 0.05$).

CONCLUSION AND RECOMMENDATION

The diagnosis of AIH is still a challenging entity in children. It needs to be based on the usual criteria as history, hypergammaglobulinemia, autoantibodies as ANA, SMA, LKM histopathological examination of liver biopsy. Newly developed autoantibodies, HLA DR3 or DR4 and Score for diagnosis AIH which was designed by Johnson and McFarlane,(1993) should be considered in doubtful cases.

The need to implement one of two diametrically opposed treatment strategies requires the practitioner to evaluate carefully all relevant data before instituting therapy. Inappropriate treatment with interferon alpha may exacerbate underlying autoimmune hepatitis, whereas corticosteroid therapy may increase levels of viremia in chronic hepatitis C.

In conclusion, we found that blood transfusion is still a major risk factor in viral hepatitis B & C inspite of screening of blood, so it must be given only if highly indicated . Also, history of injections is a risk factor and it is necessary to do programs of health education about preventing measures to avoid viral hepatitis and stress on vaccine of HBV and management of babies born to HBV positive mothers.

SMA in a titer of 1/20 is insignificant since it is present in all healthy controls. A higher titer is considered positive yet not specific and may indicate a chronic live disease whether autoimmune hepatitis or viral hepatitis.

ANA are not specific for AIH as it was found in comparable percentages in both AIH (30%) and (26.1%) in viral hepatitis group.

LKM although present in higher percentage than ANA, they are present in comparable percentages in both AIH and viral hepatitis group.

AMA are rare in AIH as it was present in only one case (3.3%) compared also to 1 case (4.3%) in viral hepatitis.

ANCA by (IF) technique is not a useful diagnostic autoantibody in pediatric autoimmune hepatitis. It was positive in 26.7% in AIH and 30.4% in viral hepatitis.

Thus it is recommended to search for another autoantibodies other than the routine autoantibody testing (ANA, SMA, AMA, LKM) such as liver cytosolic (LC1) and liver pancreas (LP). LC1 was tried in Italy and Germany and it was found to be a specific marker in pediatric group of AIH and it is recommended to be used in routine screening for AIH . Also, soluble liver antigen (SLA) may be a useful diagnostic marker in pediatric AIH.