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Infections Hepatitis - Study of 100 Cases

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The well-recognised credo of students of human illness introduced by the founders of present day medicine is that a disease process can only be fully understood and interpreted if the functional derangement can be clearly associated with the morphological changes observed during life or at the autopsy. Despite efforts of the clinicians and pathologists, the task of correlating the clinical manifestations of liver diseases, the functional derangement as recognised in the laboratory and the morphological alteration remains unfinished. The basic functions of the liver are not fully understood so far and there are various tests to estimate them. The evaluation of hepatic function is of major importance in diagnosis and management of diseases of an organ system with such diverse functional activities. Functional diagnosis in hepatic disease is of limited value and this has created a demand for supplementation for the study of structural alterations. Liver is the main organ affected in infectious hepatitis and each case presents a new problem in correlating between clinical manifestations and disturbed liver functions. Diseases of the liver throw the entire system out of gear and many systemic diseases are responsible for affections of the liver.

HISTORICAL

The first report of contagious or infectious type of jaundice came from Germany in 751 A.D. in a personal communication from a letter by Pope Zacharias to St. Boniface, Archbishop of Mainz. Rokitansky in 1842 described jaundice due to massive necrosis of liver and named it acute yellow atrophy. Virchow in 1865 suggested that benign transient form of jaundice usually seen in young persons was due to catarrhal inflammation which included papilla of vater with a mucous plug. He proposed the name “Icterus Catarrhalis”. In 1890 Flindt suggested that the essential lesion was degeneration of hepatic parenchyma and in 1912 cockayne independently reached the same conclusion. Abundant confirmation followed particularly from Scandinavians Lindstedt, Ehrstron, Wallgren, Eppinger and later Stilzer in 1876, Frolich in 1879 showed that the first evidence of hepatocellular degeneration in early stages of disease. They conclusively demonstrated that catarrhal jaundice and epidemic hepatitis and some cases of acute yellow atorphy were manifestations of the same disease.

In 18th and 19th century infectious hepatitis was a disease of military importance. The French designated at “Jeunisee descamps” and the Germans ad “Kriegsikoruror Soldatengelbsucht”. Yeogt in Germany was the first to demonstrate infectivity of the disease in volunteers. Roholm and Iversen in 1939 developed a technique of liver biopsy and Dible, McMichael, Sherlock in England and Axenfeld and Brass in Germany utilised the knowledge with great success. In U.S.A., there were 72,000 cases in 1961, the highest incidence for any year since the disease was reported in 1952.

This study was conducted on one hundred cases of viral hepatitis admitted at the Kasturba City Fever Hospital. The clinical feature course, prognosis and therapeutic response to the indigenous drug Liv.52 are studied and presented.

Detailed history was taken through clinical examination was made and the degree of jaundice and state of consciousness were noted. Laboratory studies included routine blood and urine examination, urine urobilinogen, blood bilirubin content—total and direct, serum protein estimation including serum albumin, serum globulin levels, serum alkaline phosphatase level. Serum transaminase activity was studied only in a few cases.

Table 1: Duration of jaundice

Period	No. of cases
1 - 6 weeks	88
6 - 12 weeks	9
12 - 25 weeks	1
Duration could not be determined in dead cases	2

The patients ranged in age from 2 to 12 years, the majority of cases being in the age of 6-12 years (65%). Cases below one year are also reported. There were 59 males and 41 females.

The patients were mostly drawn from poor socio-economic group 80%, 15% belonged to lower middle class and 5% middle and upper middle class. Sixty percent of children did not receive adequate caloric intake and there were signs of various nutritional deficiencies. Thirty six percent children showed signs of multiple vitamin deficiencies and 17% children showed various manifestations of protein deficiency. Mild anaemia was noted in 11 cases, moderate in 9 and severe in 4 cases. Twelve children came from localities from which cases of viral hepatitis were reported.

The following table shows the duration of jaundice. The intensity and degree of jaundice varied from case to case. Two patients died of hepatic coma of which one had jaundice for six weeks and the other, two days after admission to the hospital. One case was discharged against medical advice when the bilirubin level was 10 mgms.

Table 2: The age incidence

	1-3 years	3-6 years	6-9 years	8-10 years	10-12 years	Total
No. of cases	2	33	21	30	14	100

The signs and symptoms as observed were as follows:

Table 3

Signs and symptoms	No. of cases
Anorexia	77
Yellow discolouration of urine	69
Vomiting	64
Fever	58
Nausea	42
Pruritus	39
Malaise	31
Epigastric discomfort	28
Clay coloured stools	12
Diarrhoea	11
Headache	6
Bleeding tendency	Nil

The above table shows that anorexia, yellow discolouration of urine, vomiting, fever, nausea and pruritus were the 'important' symptoms.

The size of the liver and its tenderness associated with other findings were noted and are presented in table 4. Enlarged liver was the most outstanding finding in 95 cases being tender in 76 cases.

Table 4: Clinical findings	
Findings	No. of cases
Tender liver	76
Palpable liver	95
Liver enlarged and palpable	40
Liver moderately enlarged	36
Liver markedly enlarged	7
Liver massively enlarged	2
Oedema of legs	15
Ascites	11
Spleen palpable	2
Palmer erythema	Nil

Study of the degree of jaundice as judged clinically showed the following:

Table 5	
Jaundice	No. of cases
Mild	65
Moderate	20
Severe	15

The jaundice reached its peak within 10 to 14 days and gradually receded in majority of cases. Blood showed early leucopenia with relative lymphocytosis.

Table 6: Bilirubin level at the height of jaundice	
Total bilirubin	No. of cases
Below 1 mgm	28
1 to 10 mgm	45
11 to 20 mgm	13
21 to 30 mgm	12
Above 30 mgm	2
Total	100

Two patients with blood bilirubin level 18 to 21 mgm went into hepatic coma and expired.
Blood protein values were observed as under:

Table 7		
	Normal	Diminished
Total Blood Proteins	70 cases	30 cases
Total Blood Albumin	59 cases	28 cases

Serum globulin was increased in all except two cases.

Serum alkaline phosphatase studies revealed the following:

Table 8: Serum Alkaline Phosphatase			
Units	At the height of jaundice	Mild jaundice	Recovery
Upto 5 units	10	30	49
6 to 10 units	65	60	45

11 to 15 units	8	6	3
16 to 20 units	8	1	-
Above 20 units	5	-	2

Large number of patients showed normal values during recovery phase.

Younger patients were administered Liv.52 drops. 20 drops t.d.s. and older children were given Liv.52 tablets two t.d.s. for a period varying from 6 to 24 weeks as judged from their response.

Diagnosis of infective hepatitis was confirmed on the finding of typical history, clinical symptomatology and findings and laboratory evidence. The findings of liver function tests were of additional value. Serum bilirubin gave an accurate indication of severity of jaundice. Blood bilirubin studies help in determining the progress of jaundice. In the present series, the study of urobilinogen values were not found to be proportionate to the severity of jaundice. Serum alkaline phosphatase estimation is of limited value in diagnosis and prognosis of infective hepatitis. Regarding SGOT and SGPT studies, pyruvic transaminase is said to be more sensitive than the oxaloacetic transaminase in depicting acute hepatocellular damage. The highest level of transaminase activity were observed in patients during the initial phase of viral hepatitis. In viral hepatitis it has been observed that SGPT rises to higher levels than SGOT. This study confirms the reported observation of Wroblewski and Ladue that SGPT is elevated from 2 to 1000 times in the normal hepatitis and is somewhat a more sensitive index of hepatocellular damage than the SGPT. E.S.R. is higher in pre-icteric stage, comes to normal in icteric phase and again rises when the jaundice subsides. It eventually returns to normal with complete recovery, but sustained high E.S.R. is an indication of continuing hepatic dysfunction.

There may be complete recovery, remission and exacerbation or longstanding chronic disease or death.

Liv.52 is reported to offer quite considerable protection against carbon tetrachloride and many other toxic agents: Sheth *et al*, 1960; Joglekar *et al*, 1963; Karandikar *et al*, 1963; Joglekar and Leevy, 1970. Microscopic examination of the liver of animals treated with Liv.52 and carbon tetrachloride shows that the peripheral cells of the liver parenchyma escape necrosis and definitely show less deglycogenation but the central cell necrosis cannot be prevented. Further the drug prevents deglycogenation of the peripheral part of the liver lobule and stimulates that part of the lobule to synthesise serum albumin. Due mainly to the rise of an absolute concentration of albumin fraction all animals receiving Liv.52 show a more normal albumin globulin rate (Sheth *et al*, 1960). Liv.52 markedly improves the functional activity of the liver by acting as a powerful hepatic stimulant (Mukerjee and Dasgupta, 1970). It protects hepatic parenchyma against toxic agents and accelerates cellular metabolic activity and promotes regeneration and showed marked lipotropic activity (Joglekar *et al*, 1963). It regulates plasma protein concentration and the liver function tests return to normal or near normal (Mukerjee and Dasgupta, 1970; Sule and Sathe, 1957). It also improves appetite and brings a feeling of well-being and gain in body weight thus encouraging normal growth in children (Athavale, 1966; Indira Bai, 1970). No toxic or side effects are so far reported by the field workers (Patel and Sadre, 1963; Joglekar and Leevy, 1970).

Infective hepatitis forms a large group of cases admitted at the Kasturba City Fever Hospitals. Every year approximately 1500 - 3000 children are admitted for infectious hepatitis. Every fourth year there is a spurt in the number of cases and we are well conversant with the natural history, clinical progress and the results of the conventional therapy and the therapy with the addition of corticosteroids and hence it was not thought necessary to have a controlled study in the groups with and without Liv.52 administration in this study.

The jaundice in this series cleared much earlier, there were fewer or no complications, appetite returned to normal and the course of the disease was uneventful and convalescence was more rapid and there was quicker recuperation of the liver. There was a sense of well-being and the liver function tests and blood bilirubin studies suggested early response and improvement and the average number of days of jaundice was much less than in the non-treated group. The drug was continued for 12 weeks to 24 weeks depending on the exigency of the case. The results clearly show that the addition of Liv.52 to the usual therapy helped in cutting down the course of the disease and relieving jaundice earlier. Corticosteroids were not used in this series. The appetite returns earlier and there is a general feeling of well-being. The clinical improvement shown by cases treated with Liv.52 was more quick and significant. There was marked improvement in the relief of the symptoms of nausea, vomiting, anorexia and abdominal pain. Pruritus was also significantly relieved and the liver size and tenderness decreased. The digestive functions improved and the period of convalescence was definitely cut short. The laboratory findings of serum bilirubin levels, serum alkaline phosphatase levels and SGOT and SGPT levels showed also earlier return to normal. Probably the cases with oedema and/or ascites were cases of subacute hepatic necrosis. They recovered after a stormy course. There is a large amount of experimental evidence in laboratory animals of the protective action of Liv.52 against various toxic agents. It is probable and likely that Liv.52 protects the liver against further damage, promotes cellular regeneration of partially damaged hepatic parenchyma and thus prevents further necrosis and consequent fibrosis. No toxic effects were noted on exhibition of Liv.52.

Prolonged administration of Liv.52 after an attack of infective hepatitis would help to re-establish the former liver function and help the body metabolic processes and thus effectively contribute to the role of a healthy liver in various important and essential physiological body functions.

1. One hundred cases of infective hepatitis in children are studied.
2. Detailed clinical and laboratory studies are made.
3. Results of therapy with Liv.52 Drops/Tablets are assessed and compared with the available data.

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