[***Probe*** (1972): (XI), 4, 214-220]

# Clinico-biochemical study of Infective Hepatitis with Special Reference to Liv.52 Therapy

**Dave, D.S.,** *M.D. (Paed.), D.C.H.*, Reader and Head of the Department of Paediatrics
**Rajput, V.J.,** *M.D. (Paed.),* Lecturer in Paediatrics,
and
**Gupta, M.R.,** *M.B.,B.S., D.C.H.,* Research Assistant,
Department of Paediatrics, G.R. Medical College, Gwalior, M.P., India.

Infective hepatitis is an acute communicable disease caused by a virus characterised clinically by symptoms ranging from slight malaise to severe hepatitis and jaundice, culminating in hepatic coma and death. In India 90 per cent of jaundice is due to infective hepatitis.

There is so far no specific therapy for viral hepatitis. It was considered desirable to ascertain the effects of Liv.52 (The Himalaya Drug Co.) which is a combination of indigenous drugs on infective hepatitis.

Liv.52 contains Capparis spinosa (Kabra), Cichorium intybus (Kasni), Solanum nigrum (Makoi), Cassia occidentalis (Kasondi), Terminalia arjuna (Arjuna), Achillea millefolium (Gandana), Tamarix gallica (Jhau).

The drug Liv.52 has been observed to have experimental and clinical evidence of a powerful hepatic stimulant and choleretic, which markedly increases the functional efficiency of liver. It improves digestion and relieves flatulence and discomfort. It protects the hepatic parenchyma against toxic agents and also has anabolic choleretic, stomachic, diuretic aperient action [Sule *et al.,* (1956), Murkibhavi and Sheth (1957), Sheth *et al.,* (1960), Joglekar *et al.,* (1963), Patel and Sadre (1963), Karandikar *et al.,* (1963), Captain and Syed (1966) and Joglekar and Leevy (1970)].

## MATERIAL AND METHODS

The present trial on Liv.52 has been carried out in 30 cases of infective hepatitis while 5 patients served as controls, 27 cases were admitted in the children's medical ward J.A. Group of Hospitals attached to G.R. Medical College, Gwalior, while 8 cases were included from the children's medical outpatient department.

A detailed history of each case was taken regarding past illness, environmental contact and family illness. A thorough physical and clinical examination was done of each case. Laboratory tests included routine Hb, total red blood corpuscles, total and differential white blood corpuscles count, urine for bile salts and bile pigments and specific liver function tests including serum bilirubin, Vandenergh reaction, serum alkaline phosphatase and serum proteins. In 8 cases the liver function tests could not be done.

All the patients were kept on routine supportive treatment like glucose, vitamins, broad-spectrum antibiotics and low fat diet. None of them received corticosteroids.

The 35 cases were divided into two groups:

1. Group A – 30 cases – Liv.52 given in addition to routine supportive treatment.
2. Group B – 5 cases – Liv.52 not given, served as control.

Liv.52 was given in the following schedule: Child below 3 years – 10 to 15 drops, three times a day and children above 3 years, 2 tablets or two teaspoonful Liv.52 syrup t.d.s.

The detailed physical and clinical examination and investigations of each case were repeated weekly to assess improvement excepts in eight cases where assessment of improvement was done by clinical examination in the absence of laboratory investigation.

**Table 1:** Showing sex incidence in infective hepatitis

| Sex | Group A | | Group B | |
|---|---|---|---|---|
| | No. of cases | % | No. of cases | % |
| Male | 20 | 66.6% | 3 | 60% |
| Female | 10 | 33.3% | 2 | 40% |

**Table 2:** Showing age incidence in infective hepatitis

| | | Group A | | Group B | |
|---|---|---|---|---|---|
| | | No. of cases | % | No. of cases | % |
| 1. | Below 1 year | 1 | 3.3% | | |
| 2. | Between 1-3 years | 10 | 33.3% | 5 | 100% |
| 3. | Between 3-5 years | 9 | 30.0% | | |
| 4. | Between 5-10 years | 7 | 23.3% | | |
| 5. | Above 10 years | 3 | 10.0% | | |

**Table 3:** Showing symptomatology in infective hepatitis

| Symptoms | Group A | | Group B | |
|---|---|---|---|---|
| | No. of cases (30) | % | No. of cases (5) | % |
| Fever | 21 | 70.0% | 4 | 80% |
| Anorexia | 14 | 46.7% | 2 | 40% |
| Yellowish sclera and urine | 29 | 96.7% | 5 | 100% |
| Nausea and vomiting | 8 | 26.7% | | |
| Constipation | 6 | 20.0% | 1 | 20% |
| Diarrhoea | 2 | 6.7% | | |
| Pain in abdomen | 6 | 20.0% | 1 | 20% |
| Irritability | 5 | 16.7% | | |

**Table 4:** Showing physical signs in infective hepatitis

| Physical signs | Group A | | Group B | |
|---|---|---|---|---|
| | No. of cases (30) | % | No. of cases (5) | % |
| Distension of abdomen | 7 | 23.3% | 1 | 20% |
| Hepatomegaly | 30 | 100.0% | 5 | 100% |
| Jaundice | 28 | 93.3% | 5 | 100% |
| Spleenomegaly | 6 | 20.0% | 2 | 40% |

**Table 5:** Showing improvement in symptomatology in patients in groups A and B after starting the therapy

| Symptoms | Group A | Group B |
|---|---|---|
| Fever | 3rd day | 5th day |
| Anorexia | 7th day | 10th day |
| Yellowish sclera and urine | 18th day | 25th day |
| Nausea and vomiting | 2nd day | |
| Constipation | 3rd day | 4th day |
| Diarrhoea | 1st day | |
| Pain in abdomen | 4th day | 5th day |
| Irritability | 3rd day | 5th day |

**Liver Function Tests**

| **Table 6:** Serum bilirubin levels in patients in groups A and B on admission | | | | |
|---|---|---|---|---|
| Serum bilirubin mgm% | Group A | | Group B | |
| | No. of cases (22) | % | No. of cases (5) | % |
| 0-5 | 13 | 59.1% | 3 | 60% |
| 5-10 | 6 | 27.3% | 2 | 40% |
| 10-15 | 2 | 9.1% | | |
| Over 15% | 1 | 4.5% | | |

| **Table 7:** Showing serum bilirubin levels in patients in groups A and B after 15 days' treatment | | | | |
|---|---|---|---|---|
| Serum bilirubin mgm% | Group A | | Group B | |
| | No. of cases (22) | % | No. of cases (5) | % |
| 0-1 | 13 | 59.1% | | |
| 1-2 | 3 | 13.6% | 2 | 40% |
| 2-3 | 3 | 13.6% | 2 | 40% |
| 3-5 | 1 | 4.5% | 1 | 20% |
| 5-7 | 2 | 9.1% | | |

| **Table 8:** Showing serum alkaline phosphatase levels in patients in groups A and B on admission | | | | |
|---|---|---|---|---|
| Serum alkaline phosphatase KA Units | Group A | | Group B | |
| | No. of cases (22) | % | No. of cases (5) | % |
| 5-10 | 1 | 4.5% | | |
| 10-20 | 10 | 45.5% | 1 | 20% |
| 20-30 | 6 | 27.3% | 4 | 80% |
| Above 30 | 5 | 22.7% | | |

| **Table 9:** Showing serum alkaline phosphatase levels in the patients in groups A and B 15 days after treatment | | | | |
|---|---|---|---|---|
| Serum alkaline phosphatase K.A. Units | Group A | | Group B | |
| | No. of cases (22) | % | No. of cases (5) | % |
| 5-10 | 9 | 40.9% | | |
| 10-15 | 6 | 27.3% | 1 | 20% |
| 15-20 | 7 | 31.8% | 4 | 80% |
| Above 20 | | | | |

| **Table 10:** Showing fall in the values of individual liver function tests in groups A and B after 15 days of treatment | | |
|---|---|---|
| Liver Function Tests | Fall in values | |
| | Group A (22) | Group B (5) |
| Serum bilirubin level mgm/100 cc. | 3.5 | 1.3 |
| Serum alkaline phosphatase in K.A. Units | 7.5 | 5 |

## DISCUSSION

Patrao (1957) and Mathur (1957) reported that Liv.52 helps in improving the outlook in severe hepatic damage. Sheth (1963) observed that it has a salutary effect on anorexia of infective hepatiitis. Qazi (1965) stated that in animal experiments Liv.52 has a good influence on biochemical and functional abnormalities of the liver. He has reported that the drug has a protective action against hepatotoxicity of tetracycline in rats. Arora (1969) reported that Liv.52 adds "materially to patients' comfort and accelerates recovery". According to Jaffari and Shyamraj (1969) Liv.52 clears jaundice earlier, improves appetite and gives a sense of well-being. According to Prasad and Tripathi (1969) the addition of Liv.52 to the therapy brought about an immense increase in appetite and power to assimilate without bowel disturbances in cases of infective hepatitis and malnutrition. Dayal *et al.,* (1971) reported improvement in general condition, regression in jaundice and improvement in liver function tests. They found that inflammatory cells in the liver tissue were less after Liv.52 therapy and recovery was quicker. Prasad and Prasad

(1971) reported 85% cure rate while poor response in 15% of cases with Liv.52, in infective hepatitis. Ramalingam *et al* (1971) reported that in infective hepatitis with the therapy of Liv.52 symptoms improved earlier than in the Vitamin C plus B-complex group, better weight gain was recorded and earlier restoration of liver function to normal observed.

In our observations we found that the average number of days for the clearance of jaundice in groups A and B were 18 and 25 days, respectively. More weight gain was observed in group A cases. Improvement in relief of symptoms – nausea, vomiting, abdominal pain, general condition and return of appetite was quicker in the Liv.52 group as compared to the control series. Diminution of size of liver and spleen were observed in all cases but more rapidly in the Liv.52 group.

It was noted that Liv.52 had brought down the values of serum bilirubin 3.5 mgm/100 cc of blood within 15 days in comparison to 1.3 mg/100 cc in those cases where Liv.52 was not administered (Tables 6,7 and 10). The alkaline phosphate was brought down 7.5 K.A. units/100 cc of blood within 15 days of Liv.52 therapy (Tables 8, 9 and 10).

## CONCLUSION

The exact mode of action of Liv.52 is still not fully understood. It stimulates hepatic function and possibly by reducing intra-hepatic congestion by its anti-inflammatory action, it relieves cholestasis, and clears the jaundice, which in the words of Bradley (1963) is the unique clinical manifestation of hyper bilirubinaemia.

It is also likely that it helps in quicker regeneration of hepatic parenchyma. It is a powerful hepatic stimulant and choleretic, which markedly increases the functional efficiency of the liver. It improves digestion and relieves flatulence and discomfort. The drug regulates plasma protein concentration. Liver function tests return to normal or near normal. Liv.52 brings about marked improvement in appetite, a feeling of well-being and gain in body weight. It has a pronounced anabolic action. It has also stomachic and diuretic actions. These actions are, in all likelihood, due to the different components of Liv.52. Thus it brings about its definite although non-specific protective action on the liver in more ways than one.

Due to its anti-inflammatory action it resembles the corticosteroids in its action. As the use of corticosteroids has to be limited. Liv.52 can be used freely to achieve the same anti-inflammatory effects in infective hepatitis.

## SUMMARY

A clinical trial of Liv.52 was carried out in 30 cases while 5 cases served as controls. The recovery was assessed by physical, clinical and laboratory tests. The therapeutic results have been compared with control cases.

The drug is safe, non-toxic and it has multiple actions i.e. hepatic stimulant, choleretic, stomachic, anabolic, eutrophic, lipotropic, has a protective effect on hepatic parenchyma against toxic agents, as diuretic and improves digestion, relieves flatulence and discomfort, accelerates metabolic activity, promotes regeneration of liver cells, encourages normal growth in children, stimulates normal haemopoiesis, hastens recovery and cuts short the period of convalescence and improves the liver function tests to normal. By virtue of these actions the use of Liv.52 in infective hepatitis is recommended.

## ACKONWLEDGEMENT

We are thankful to Professor I.P. Agrawal, *Dean*, G.R. Medical College and Dr. Hissamuddin, *Joint Director and Superintendent,* J.A. Group of Hospitals, Gwalior, for permission to publish the

article. We thank Messers The Himalaya Drug Co., for the supply of Liv.52 used in these clinical trials.

**REFERENCES**

1. Arora, Major J.K.: 'Role of various types of treatment in infectious hepatitis'. *Armed Forces Medical Journal* (1969): 3, 362.
2. Bradley, S.E.: *Cecil Loeb Textbook of Medicine* (1963): II edition, page 1027, W. Saunders.
3. Captain, S.R. and Syed, A.H: 'Clinical studies on Lvi.52 in race horses'. *The Indian Veterinary Journal* (1966): 43, 11.
4. Dayal, R.S. *et al.*: 'A clinico-pathological study of hepatomegaly with special reference to Liv.52 therapy'. *Journal of the Indian Medical Profession* (1970): 9, 7768.
5. Joglekar, G.V. *et al.* 'Protection of indigenous drugs against hepatotoxic effects of carbon tetrachloride in mice'. *Acta Pharmacol et toxicol* (1963): 20, 73.
6. Joglekar, G.V. and Leevy, C.M.: 'Effect of indigenous drugs on I.C.G. clearance with autoadiographic patterns in albino rats with experimentally induced hepatotoxicity'. *Journal of the Indian Medical Profession* (1970): 12, 7480.
7. Jaffari, S.M.H. and Shyamraj: 'Liv.52 in infective hepatitis'. *The Antiseptic* (1969): 5, 353.
8. Karandikar, S.M. *et al.*: 'Protection by indigenous drugs against hepatotoxic effects of carbon tetrachloride – A long-term study'. *Acta Pharmacol et toxicol* (1963): 20, 274.
9. Mathur, P.S.: 'Some clinical observations on the use of Liv.52 in cases of cirrhosis of liver in children'. *Current Medical Practice* (1957): 2, 107.
10. Murkhibhavi, G.R. and Sheth, U.K.: 'Treatment of jaundice in dogs with an indigenous preparation Liv.52'. *The Indian Veterinary Journal* (1957): 4, 276.
11. Northover, B.J. *et al.*: *Ind. J. of Paed.* (1960): 149, 202.
12. Patel, Jal R. and Sadre, N.L.: 'Effect of Liv.52 on structural and functional damage caused by some hepatotoxic agents'. *Probe* (1963): 1, 19.
13. Prasad, L.S. and Prasad, K.: 'Some observations on Liv.52 in the treatment of infective hepatitis and cirrhosis of liver'. *Probe* (1971): 3, 114.
14. Patrao, S.: *Journal of the Indian Medical Profession* (1957): 8, 1878.
15. Prasad, L.S. and Tripathy, D.: 'Studies with Liv.52'. *Probe* (1969): 1, 1.
16. Qazi, I.H.: 'Effect of Liv.52 on biochemical and functional abnormalities of the liver.' *Probe* (1965): 5, 1.
17. Ramalingam, V. *et al.*: 'Liv.52 studies in acute hepatitis'. *Indian Paediatrics* (1971): 12, 839.
18. Sheth, S.C. *et al.*: 'Therapy of Anorexia with Liv.52'. *Probe* (1963): 4, 137.
19. Sule, C.R. *et al.*: *Indian Practitioner* (1956): 4, 357.