(***Probe*** (1978): (XVII), 2, 143-149)

# Evaluation of Liv.52 in the Treatment of Jaundice with Pregnancy

**Prof. Arun Kumar Mitra,** *M.B.,B.S., D.G.O., M.D. (Cal.), F.R.C.O.G., Ph.D. (Lond.)*
Associate Professor of Gynaecology and Obstetrics, and
**Abhik De,** *M.B.,B.S.,* Research Assistant,
Calcutta Medical College, India.

Pregnancy is a natural physiological condition, which should be uneventful and end successfully without any disturbance to the mother and the baby. It involves a certain degree of strain on all the systems of the body. In order to maintain the internal milieu and metabolic adjustments the liver plays a significant part. jaundice in pregnancy may be due to factors related or unrelated to pregnancy. The clinical course of these diseases may be altered to a variable degree during pregnancy. In India, hepatocellular dysfunction and jaundice often have a deleterious effect both on the mother and the baby. In Eden Hospital, Calcutta, between the years 1964 and 1973 the number of cases due to jaundice in pregnancy has been on the increase. It is also noted that mortality in liver diseases is higher in pregnant than in non-pregnant women

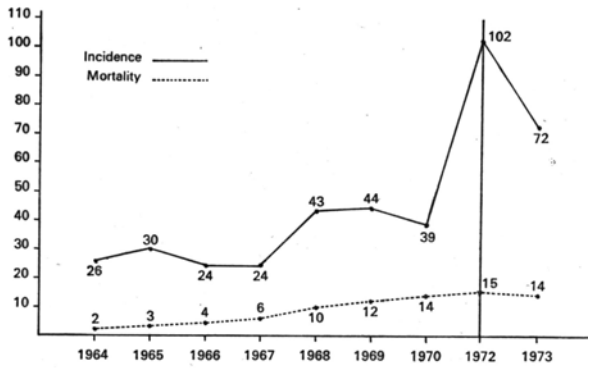


**Figure 1:** Showing the trend of incidence and mortality of jaundice during pregnancy in Eden Hospital, Calcutta

In an attempt to relieve the symptoms and treat these cases, a controlled clinical trial on a herbal preparation, Liv.52, manufactured by The Himalaya Drug Co., was undertaken to evaluate the effect of this drug on various types of liver diseases in pregnancy.

The exact mode of action of this drug is not known. It is claimed that it has choleretic, stomachic, diuretic and regenerative properties (Patel *et al,* 1972). Each tablet of Liv.52 contains:

| | |
|---|---|
| Capparis spinosa | 65 mg |
| Cichorium intybus | 65 mg |
| Solanum nigrum | 32 mg |
| Cassia occidentalis | 16 mg |
| Terminalia arjuna | 32 mg |
| Achillea millefolium | 16 mg |
| Tamarix gallica | 16 mg |
| Mandur bhasma | 33 mg |

Prepared in the juices and decoctions of various hepatic stimulants.

## MATERIAL AND METHODS

The study consisted of 84 cases of liver disorders in pregnancy admitted in Eden Hospital during the years 1974 and 1975. These cases consisted of the following different types of liver disorders with pruritus and/or jaundice.

| **Table I:** Types of liver disorders | |
|---|---|
| Cholestatic jaundice | 37 cases |
| Pruritus | 29 cases |
| Viral hepatitis | 9 cases |
| Effect of hepatotoxic drugs | 8 cases |
| Biliary tract disorder | 1 case |
| Total | 84 cases |

There was no case of haemolytic jaundice in this series; severe cases of viral hepatitis in coma and pre-coma stages have been excluded from this study.

There were 7 cases in the first trimester of pregnancy, 25 cases in the second and 52 cases in the third trimester of pregnancy with the duration of illness varying from four to six weeks.

The dosage schedule of the drug used was two tablets orally three times a day for 6 weeks. The clinical features, liver function tests and liver histology were assessed before and after the course of the therapy to ascertain the effect of this drug in relieving the symptoms of such liver disorders in pregnancy. Assessment of liver function was done by estimating serum bilirubin, alkaline phosphatase, total plasma proteins, and noting the variation of albumin and globulin. S.G.O.T. and S.G.P.T. were measured to evaluate the hepatocellular function.

| **Table II:** Age distribution | | |
|---|---|---|
| Years | No. of cases | Percentage |
| 10 - 20 | 18 | 21% |
| 21 - 30 | 50 | 60% |
| 31 - 40 | 16 | 19% |
| Total | 84 | 100% |

Fifty three patients (64%) were from middle or upper middle class living in pucca houses, having electricity and tap water and 31 (36%) were from the lower socio-economical group living in kutcha houses with kerosene lamps and tube-well water supply.

**Clinico-Pathological Study of Liver Disorders**

The clinical signs and symptoms before and progress after treatment of six weeks were noted and are shown in Table III.

| **Table III:** Signs and symptoms present before and after treatment of 6 weeks | | | |
|---|---|---|---|
| Symptoms present | Before treatment | After treatment | Relieved |
| Pruritus | 71 (85%) | 20 (30%) | 51 (79%) |
| Anorexia | 76 (90%) | 12 (16%) | 64 (84%) |
| Nausea | 14 (17%) | 4 (28%) | 10 (72%) |
| Fever | 5 ( 6%) | 4 (28%) | 1 (20%) |
| Hypochondriac discomfort | 15 (18%) | 6 (40%) | 9 (60%) |
| Yellow discolouration of conjunctiva | 51 (60%) | 17 (33%) | 34 (67%) |
| Enlargement of liver | 20 (24%) | 8 (40%) | 12 (60%) |
| Oedema of legs | 10 (12%) | 6 (60%) | 4 (40%) |
| Ascites | 3 (4%) | 2 (67%) | 1 (33%) |

Table III shows signs and symptoms present before and after treatment of six weeks with Liv.52. After use the number and percentage of cases where relief was obtained were significant. Pruritus was relieved in 51 (79%) cases and anorexia disappeared in 64 (84%) cases.

| **Table IV:** Liver function tests before and after | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Highest | | Lowest | | Average | | Average difference |
| | Before | After | Before | After | Before | After | |
| Serum Bilirubin mg | 19.4 | 3.2 | 2.8 | 0.3 | 7.1 | 1.1 | 6 mg fall |
| Serum Alkaline Phosphatase K.A. Units | 36 | 16 | 5 | 1 | 12 | 7 | 5 Units fall |
| S.G.O.T. | 287.6 | 80.4 | 4.4 | 3.4 | 74.4 | 39.4 | 35 |
| S.G.P.T. | 144 | 79.5 | 34 | 11 | 63.2 | 40.5 | 22.7 |
| Total Blood Protein in g% | 7.2 | 8.6 | 3.2 | 4.4 | 6 | 6.5 | 0.5 g% rise |
| Serum Albumin g% | 4.9 | 5.2 | 3 | 3.9 | 3.6 | 4.1 | 0.5 g% rise |
| Serum Globulin g% | 8.1 | 3 | 1.6 | 1.4 | 4.1 | 2.3 | 1.6 g% fall |

Laboratory studies and liver function tests such as serum bilirubin, serum alkaline phosphatase, S.G.O.T., S.G.P.T., total blood protein, serum albumin, serum globulin were done in all cases and the highest and lowest reading and the average in each group before and after are shown in Table IV.

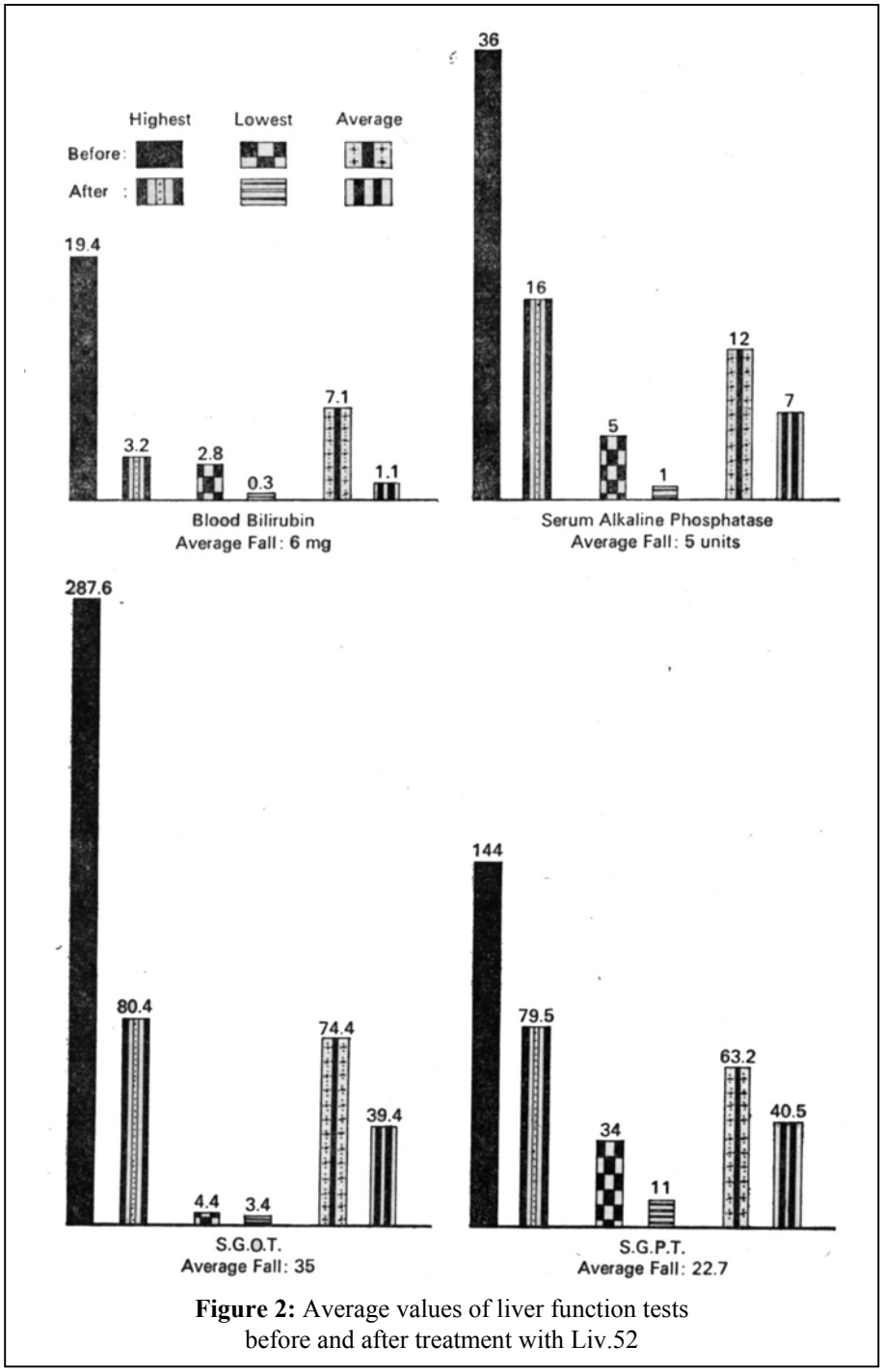


**Figure 2:** Average values of liver function tests before and after treatment with Liv.52

## HISTOLOGY

Liver biopsy was performed in 21 cases. Cholestatic jaundice showed intrahepatic cholestasis. Dilatation of bile canaliculi with accumulation of bile pigments was noted in most of the cases before treatment. There were also associated fatty changes. Necrosis or gross damage of hepatic cells was not observed. On the other hand, in viral hepatitis there was extensive periportal round-cell-infiltration extending along the in-growing fibrous septa into lobules with distortion of lobular architecture and scarring. Proliferation of bile canaliculi was observed at places. After therapy there was restoration of normal pathology in 15 cases. One case of severe viral hepatitis which died

showed complete recovery after 6 weeks treatment. The liver biopsy on viral hepatitis cases showed focal round-cell-infiltration with regenerative nodules or cirrhosis with regenerative nodules.

## SUMMARY OF RESULTS

Table V shows that maximum number of cases (52) occurred in the third trimester. The average duration of the symptoms was from 4 to 6 weeks, irrespective of the period of gestation when jaundice or pruritus appeared. Out of 7 cases occurring in the 1st trimester all were relieved during pregnancy; amongst 25 cases occurring in second trimester, 5 cases (20%) were relieved after delivery while out of 52 cases observed in 3rd trimester, 10 (19%) were relieved after delivery and 14 (27%) showed slow recovery.

**Table V:** Relation of onset of the disease in different periods of gestation to relief

| Period of gestation | Duration of illness in weeks | No. of cases | Relieved | | Not relieved |
|---|---|---|---|---|---|
| | | | During pregnancy | After delivery | |
| 1st Trimester | 6 | 7 | 7 | Nil | Nil |
| 2nd Trimester | 4 | 25 | 19 | 5 | 1 death |
| 3rd Trimester | 5 | 52 | 28 | 10 | 14 |

## DISCUSSION

Idiopathic jaundice in pregnancy presenting with generalised pruritus cannot always be differentiated from viral hepatitis. Though most of the reports on jaundice with pregnancy deal with viral hepatitis, the existence of benign jaundice of pregnancy presenting a picture of intra-hepatic cholestasis is being reported from all over the world with increasing frequency.

The liver holds a very important position in the metabolic system of the body. Its active participation in metabolism of carbohydrates, proteins and fats including detoxification of noxious substances, synthesis of plasma proteins, reticuloendothelial activity, synthesis of vitamins gives it a unique position in controlling the metabolism of the body. Its disorders during pregnancy leading to jaundice have increased in recent years throughout India, Bangladesh and Nepal. In spite of tremendous strides in modern medicines, few drugs are known which can protect the liver from damage and help in regeneration. The preliminary trial of an Indian herbal medicine Liv.52 showed its great promise in relieving symptoms, improving liver function and aiding repair of damaged hepatic cells.

The components of Liv.52, besides being diuretic, choleretic, stomachic action, have ingredients which have a protective and regenerative action on the damaged liver and a salutary effect on liver glycogen and serum protein synthesis (Sheth *et al,* 1960). In this series 37 cases of cholestatic jaundice were examined closely. In this group, pruritus was the commonest symptom. Nausea, epigastric pain, fever, etc. were less common than in the viral hepatitis group (8 cases in this series). Liver was not palpable in this group. Biochemical tests of liver function showed elevation of serum bilirubin but rise of alkaline phosphatase was less

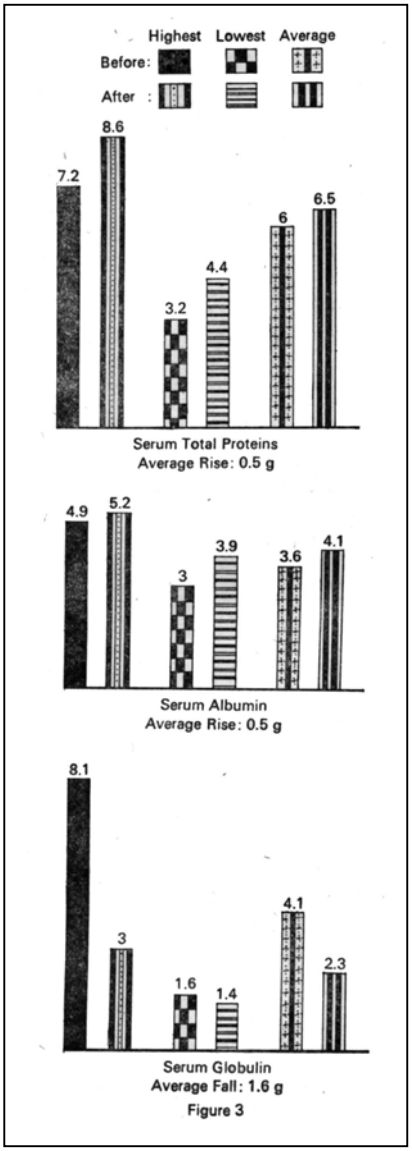

Figure 3

pronounced in comparison to the viral hepatitis group. Out of 8 viral hepatitis cases, 7 were of mild or moderate severity. S.G.P.T. and S.G.O.T. were elevated both in cholestatic jaundice group as well as viral hepatitis group but elevation was marked in viral hepatitis.

Gupta *et al* (1972) studied 36 cases of infective hepatitis and noted that the drug cuts short the duration and course of the disease with definite improvement symptomatically as well as of liver function. Jaffari *et al,* (1969) noted clearance of jaundice within 3 to 4 weeks and relief of cholestasis in 50% cases. Mukherjee (1970) noted improvement in hepatic histology after Liv.52 therapy. Singh (1977) noted uniform improvement of liver function test and clinical symptomatology in viral hepatitis.

From this study, it is seen that after a course of therapy with Liv.52 there is definite relief of symptoms viz. pruritus, anorexia and nausea in 70 to 80% cases in all types of jaundice. Yellow discolouration of conjunctiva was relieved in 67% and enlargement of liver in 60% cases within 6 weeks. Bilirubin value showed significant diminution with average fall of 6 mg in 6 weeks. A/G ration showed beneficial alteration. S.G.P.T., S.G.O.T. showed significant fall within 6 weeks. Alkaline phosphatase showed appreciable diminution. Two cases had history of recurrent jaundice in pregnancy. These two cases showed haemorrhagic tendency and post partum haemorrhage.

**CONCLUSIONS**

1. Eight four cases of various liver disorders (pruritus, cholestatic jaundice, viral hepatitis, hepato-toxicity of drugs and biliary tract disorders) were studied for the effect of Liv.52.

2. Symptomatology and clinical progress were noted after treatment with Liv.52, 2 tablets t.i.d. for 6 weeks.

3. Clinical features: Liver function tests (Blood bilirubin, Alkaline phosphatase, Total blood proteins, Serum albumin, Serum globulin and SGOT and SGPT studies) were done before the start of the therapy and after.

4. Liver biopsy was performed in 21 cases. 15 showed restoration of normal architecture and regenerative nodules in cases of viral hepatitis.

5. Eight four cases in first, second and third trimester of pregnancy were observed and the response noted.

6. Out of 84 cases, 69 were relieved, 14 were not relieved and 1 died.

7. There were no toxic effects.

**REFERENCES**


1. Gupta, S. *et al.,* Therapeutic effects of Liv.52 in post-necrotic hepatitis, *Probe* (1972): 1, 15.

2. Jaffari, S.M.H. and Shyam Raj, Liv.52 in Infective Hepatitis, *Antiseptic* (1969): 5, 353.

3. Joglekar, G.V. and Leevy, C.M., Effect of indigenous drugs on I.C.G. (Indocyanine Green): Clearance and autoradiographic patterns in albino rats with experimentally induced hepatotoxicity, *J. Ind. med. Prof.* (1970): 12, 7480.

4. Mathur, P.S., Some clinical observations on the use of Liv.52 (an indigenous drug) in cases of cirrhosis of liver in children, *Curr. med. Pract.* (1957): 2, 107.

5. Mukerjee, A.B. and Dasgupta, M., Treatment of viral hepatitis by an indigenous drug—Liv.52, *Ind. Practit.* (1970): 6, 357.

6. Patel, G.T. *et al.,* Liv.52 therapy in viral hepatitis, *Probe* (1972): 2, 112.

7. Prasad, G.C., Effect of Liv.52 on regeneration of liver cells in tissue culture—A preliminary report. *J. Res. Ind. med.* (1974): 2, 60.

8. Prasad, G.C., Electron microscopic study on the effect of Liv.52 on carbon tetrachloride treated liver, *J. Res. Ind. med. Yoga & Homoeo.* (1976): 11, 38.

9. Ramalingam, V. *et al.,* Liv.52 studies in acute hepatitis, *Ind. Ped.* (1971): 12, 839.

10. Sheth, S.C. *et al.,* Therapy of cirrhosis of liver and liver damage with indigenous drugs—experimental and clinical studies, *Ind. J. Ped.* (1960): 149, 204.

11. Singh, K.K. *et al.,* Observations on the treatment of infective hepatitis with an indigenous drug Liv.52, *Ind. med. J.* (1977): 5, 69.