

# A COMPARATIVE STUDY OF *PHYLLANTHUS AMARUS* COMPOUND AND INTERFERON IN THE TREATMENT OF CHRONIC VIRAL HEPATITIS B

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**Abstract.** Fifty-five patients with chronic viral hepatitis B were randomly divided into two groups. Thirty patients were treated with *Phyllanthus amarus* compound (PA Co) for three months in the treatment group, another 25 patients were treated with domestic recombinant human interferon alpha-1b (IFN- $\alpha$  1b) for three months as controls. The total effective rate in the treatment group was 83.3%, showing no significant difference from the control ( $p>0.05$ ). The normalization rates of ALT, A/G and SB in the treatment group were 73.3%, 80.0% and 78.2% respectively, which were significantly higher than that in the control ( $p<0.05$ ). The negative conversion rates of HBeAg and HBV-DNA in the treatment group were 42.3% and 47.8%, showing no significant difference from the control ( $p>0.05$ ). It is indicated that PA Co has remarkable effect for chronic viral hepatitis B in recovery of liver function and inhibition of the replication of HBV.

## INTRODUCTION

Chronic viral hepatitis B is a commonly and frequently encountered disease in China, also is a kind of refractory disease. The main therapeutic methods include anti-virus, anti-inflammation and anti-fibrosis, however, the effect of all drugs which are available nowadays, are far from satisfactory, and there is still a lack of specific effective therapy for the disease. *Phyllanthus amarus* compound (PA Co) has been demonstrated to have strong inhibition effects on DHBV-DNA in DHBV models (Wang *et al*, 1997). From March 1996 to July 1997, we carried out a randomized comparative study of PA Co. and IFN- $\alpha$  1b on patients with chronic hepatitis B in Guangdong Province, China, in an attempt to observe the therapeutic effect of the compound.

## MATERIALS AND METHODS

### Patients

**Inclusion and exclusion criteria:** Patients were aged between 15-55 years, no serious complication, sera HBsAg test positive and

liver function tests abnormal. Those with allergic to interferon, diseases of blood system or pregnancy were excluded. Fifty-five patients with chronic viral hepatitis B were hospitalized and randomly divided into two groups. (1) Treatment group: 30 cases, 23 were male and 7 were female, the average age was  $30.8 \pm 5.7$  (mean  $\pm$  SD) years, the average course of disease was  $6.9 \pm 0.92$  years. Twenty-six cases were sera HBeAg (ELISA method) positive, 23 cases were sera HBV-DNA (PCR method) positive. (2) Control group: 25 cases, 20 were male and 5 were female, the average age was  $32.8 \pm 6.9$  years. The average course of disease was  $5.8 \pm 6.9$  years, 20 cases were HBeAg positive and 18 cases showed HBV-DNA positive. There was no significant difference in terms of sex, age, course of disease, positive rates of HBeAg and HBV-DNA in the two group ( $p>0.05$ ).

### Treatment methods

**Treatment group:** PA Co capsule (Chief ingredients: *Phyllanthus amarus*, *Radix notoginseng*, etc each capsule contains *Phyllanthus amarus* 275 mg), was taken orally, 3 times daily, 4 capsule each time for 3 months.

**Control group:** IFN- $\alpha$  1b (Manufactured by Shanghai Institute of Biological Products) was given at a dose of  $3 \times 10^6$  U intramuscularly every other day for 3 months.

### Observation

During the period of observation, patients' symptoms and signs were recorded weekly, markers of HBV in sera including HBsAg, HBsAb, HBeAg, HBeAb, HbcAb (ELISA method), HBV-DNA (PCR method), were detected before treatment and three months after treatment. Indices of liver function including ALT, AST, A/G, SB, TP were tested every month.

### Evaluation standards of treatment effects

Reference to the Guiding Principles of Clinical Study on the Treatment of Viral Hepatitis with Herbs, worked out by the Drug Administration, Ministry of Health, PR China.

**Clinical recovery standard:** (1) Chief symptoms disappeared; (2) Enlarged liver and spleen normalized; (3) Indices of liver function returned to normal; (4) HBeAg and HBV-DNA converted to negative and lasted more than three months.

**Remarkable effectiveness standard:** (1) Chief symptoms disappeared; (2) Enlarged liver and spleen normalized; (3) Indices of liver function returned to normal; (4) Marks of HBV were changed.

**Effectiveness standard:** (1) Chief symptoms relieved or disappeared; (2) Enlarged liver and spleen normalized or had no changing; (3) Indices of liver function, such as ALT, AST, SB decreased more than 50%.

**No effect standard:** Indices of liver function, such as ALT, AST, SB decreased less than 50%.

## RESULTS

### Therapeutic effect

Of 30 cases of chronic viral hepatitis B treated with PA Co, 11 patients were clinical recovery, 6 patients showed remarkable effect, 8 patients showed effectiveness and 5 patients

showed no effect, the total effective rates were 83.3% (25/30). No side-effect was found.

Of 25 cases of chronic viral hepatitis B treated with IFN- $\alpha$  1b, 9 patients were clinical recovery, 6 patients had remarkable effect, 5 patients had effectiveness and 5 patients had no effect, the total effective rates were 80.0% (20/25).

There was no significant difference between the two groups ( $p > 0.05$ ).

### Negative conversion rates of HBVM

The negative conversion rates of HBeAg and HBV-DNA in PA Co group were 42.3% (11/26) and 47.8% (11/23), while those in IFN group were 45.0% (9/20) and 55.6% (10/18) respectively. There was no significant difference between two groups ( $p > 0.05$ ).

### Normalization rates of liver function indices

The rate of normalization of ALT, A/G and SB in PA Co group were 73.3% (22/30), 80.0% (16/20) and 78.3% (18/23) respectively, while those in IFN group were 44.0% (11/25), 50.0% (10/20) and 38.9% (7/18) respectively, which showed significant difference between two groups ( $p < 0.05$ ).

## DISCUSSION

Interferon remains one of the main drugs in treatment of hepatitis B. It has been demonstrated that the negative conversion rates of HBV-DNA and HBeAg were 40-60% in patients using IFN with the dosage of  $3-5 \times 10^6$  given every other day for 3-6 months (Jay *et al*, 1988; Xiong, 1995). In our clinical trial, the negative conversion rates of HBeAg and HBV-DNA were 45.5% and 55.6% in patients using domestic recombinant human IFN- $\alpha$  1b for 3 months, which is coincide with most of the other studies reported.

*Phyllanthus amarus* has been demonstrated to have good therapeutic effect on chronic viral hepatitis B (Thayagarajan *et al*, 1988). *Radix notoginseng* was reported to have effects of

immunity regulation, protection liver cells and inhibition of liver fibrosis (Lui *et al*, 1988, Chen *et al*, 1995). Our study showed that PA Co showed no significant difference from IFN in the negative conversion rates of HBeAg and HBV-DNA ( $p>0.05$ ), and the effect on improvement of liver function was better than that of IFN ( $p<0.05$ ). This suggests that PA Co has a good therapeutic effect on chronic viral hepatitis B.

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