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LETTER-TO-THE-EDITOR

Influences of Different Therapy Protocols for Chronic Hepatitis B Infection in Turkish Children on Nutritional Anthropometric Data

Sir,

Interferon alpha and nucleoside analogs are widely used for the treatment of chronic hepatitis B infection in children. However, relatively few studies have evaluated the impact of the treatment of chronic hepatitis B infection on children's growth (1,2). We comment on the influences of different therapy protocols for chronic hepatitis B infection in Turkish children on nutritional anthropometric data.

Thirty-two Turkish children (mean age: 8.7±4.1 years; range: 2-15.5 years, male/female ratio: 24/8), with histologically-proven chronic active hepatitis B infection, who received treatment for the disease, were evaluated retrospectively from patients' charts. Three different therapy protocols were applied. The first group of eight children had received interferon alpha 2a (Roferon-A; Roche U.S. Pharmaceuticals, USA) 5 MU/m^2 three times a week for six months. The second group of 12 patients had received lamivudine 4 mg/kg a day (Epivir, oral solution, tablet; Glaxo Wellcome, USA) for two years. In the third group, 12 patients had simultaneously received interferon alpha 5 MU/m^2 three times a week and lamivudine for six months, and treatment with lamivudine was completed in two years. Body-weight, body-height, weight-for-height, body mass index (BMI), percent standard BMI, and percent standard body-height values that had been evaluated before and every three months during therapy, and at the end of six and 12 months after treatment were noted.

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At baseline, six of the 32 children were mildly malnourished according to Waterlow classification (3), and there was no difference among the treated groups in anthropometric data ($p>0.05$). At the first month of follow-up, body-weight and weight-for-height decreased in the interferon and the combination therapy group ($p<0.05$). However, these findings were not persistent. There was no difference in anthropometric data between beginning and follow-up values in all patients ($p>0.05$). At the end of treatment, four children were still malnourished (Table 1).

The increase in percent standard body-height was observed in the lamivudine ($p<0.01$) and the combination therapy group ($p<0.01$) but not in the interferon therapy group ($p=0.10$) at sixth month after treatment. The increase was persistent in all three therapy groups, 12 months after treatment.

Twelve months after treatment, the seroconversion rate was 16.6% in the interferon, 20% in the lamivudine, and 50% in the combination treatment group. We did not find any differences in nutritional anthropometric data at the beginning of treatment among the patient groups who did (n=10) and did not (n=22) show seroconversion ($p>0.05$).

Gottrand *et al*. found significant but transient abnormalities of the nutritional status, which were encountered constantly at the beginning of interferon-alpha therapy without any deleterious effect on growth (1). We observed the deterioration of nutritional status in terms of anthropometric data only at the first month of the interferon and the combination therapy. However, this finding had not been permanent. Six months after the end of treatment while percent standard body-height was increasing in the lamivudine and the combination therapy group, the increase was not observed in the interferon therapy group. This finding might be related to influences of interferon.

Table. Anthropometric data of children with chronic hepatitis B infection in different therapy protocols

Anthropometric parameter	Interferon (n=8)			Lamivudine (n=12)			Interferon plus lamivudine (n=12)		
	Baseline*	End of treatment	12 months after the end of treatment	Baseline*	End of treatment	12 months after the end of treatment	Baseline*	End of treatment	12 months after the end of treatment
Body-weight (kg)	27.2±18	27±16.2	31.4±12	28.3±19.2	31.8±15.1	32.1±16.4	26.4±12.5	26.8±7.3	28.2±13
Percent standard body-height (%)†	100.3±25.7	100.1±24	102.7±22.4	98.3±15.9	98.2±14	102.2±16.6	102.6±14.2	101.7±14	103.7±19
Weight-for-height (%)	101.5±7.7	96.5±9.3	100.2±6.2	102.3±18.5	98.4±14.7	98.5±17.5	102.6±9.8	99.6±9.3	101±10.2
Body mass index (kg/m^2)	17.1±2.6	16.8±2.5	17±2.6	18±3.9	17.7±3.4	18.68±3.7	16.9±2	16±1.6	16.2±2.3

*At baseline, there was no difference between therapy groups in anthropometric data ($p>0.05$)
†In all therapy groups, the increase in percent standard body-height was persistent 12 months after treatment ($p<0.05$)

We did not detect any nutritional deprivation either in separate therapy groups or in all patients by percent standard BMI, weight-for-height, standard body-weight and height during the follow-up period without treatment (one year for the interferon, three years for the lamivudine and the combination therapy group).

We conclude that, as it is known, the influences of interferon therapy on the nutritional status of children are not permanent. Correct dietetic proceeding is necessary to decrease the frequency and intensity of disturbances in nutritional status in this group of children. Lamivudine therapy does not affect the nutritional status of children with chronic hepatitis B infection during therapy and at least two years after treatment. Furthermore, we speculate that the nutritional status of children at the beginning of treatment does not affect treatment efficacy on seroconversion rate in chronic hepatitis B infection. Additional research is needed to further evaluate these observations.

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