Think About the Application of Vitamin E to Heterozygous Familial Hypobetalipoproteinemia to Prevent Liver Cirrhosis and Hepatocellular Carcinoma

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Familial hypobetalipoproteinemia (FHBL) is a rare genetic disease characterized by low levels of low-density lipoprotein (LDL) cholesterol and apolipoprotein (apo) B. In homozygous FHBL, dietary fat restriction and long-term high-dose vitamin E and A supplementation are recommended to prevent the progression of neuromuscular and retinal degenerative disease [1]. However, it has been considered that heterozygous FHBL subjects are usually asymptomatic, and do not require vitamin E supplementation [1]. The accumulated literatures suggest the development of fatty liver diseases including non-alcoholic steatohepatitis (NASH)-related cirrhosis and hepatocellular carcinoma (HCC) in heterozygous FHBL individuals [1-11].

A 33-year-old skinny man was referred to me for the treatment of heterozygous FHBL. He had been diagnosed to have fatty liver disease and heterozygous FHBL 6 years ago. However, he was told that there was no treatment for FHBL by the doctor. His serum levels of total cholesterol, LDL-cholesterol and apo B (normal range: 73 - 109 mg/dL) were 102, 27 and 22 mg/dL, respectively, supporting the diagnosis of heterozygous FHBL. He complained of steatorrhea and general fatigue. I started the treatment using dairy 150 mg of vitamin E, which ameliorated steatorrhea and general fatigue. He gained body weight by 3 kg. His father was diagnosed to have HCC when he was 63 years old; however, hepatitis B and C viruses, and alcoholism were not detected, suggesting the development of HCC due to NASH.

Vitamin E supplementation has been recommended for persons with homozygous FHBL because this disease leads to low serum lipid-soluble vitamin E. However, it has not been recommended that persons with heterozygous FHBL receive vitamin E supplementation [1, 12]. I think that a significance of vitamin E for fatty liver diseases including NASH, liver cirrhosis and HCC in heterozygous FHBL individuals has been forgotten. To our knowledge, there are no literatures about the application of vitamin E to prevent NASH in heterozygous FHBL. The efficacy of vitamin E is reasonably well established in a selected group of patients with NASH, who are not FHBL patients [13]. To prevent NASH, liver cirrhosis and HCC, we should think about the application of vitamin E to heterozygous FHBL patients who may have low serum vitamin E levels and may be also prone to develop NASH.

Conflicts of Interest

The author declares that there are no conflicts of interest concerning this article.

References

9. Tarugi P, Lonardo A, Gabelli C, Sala F, Ballarini G, Cor-

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