

Pulse Spectrum Analysis in Patients of Liver cirrhosis with Hepatocellular carcinoma

Fun-jou Chen¹, Yu-Kuang Cheng², Cheng-Ju, Yu³

1. China Medical University, School of Chinese Medicine
2. National Taichung University of Education, Department of English
3. China Medical University Hospital

Abstract

Hepatocellular carcinoma (HCC) is the fifth most common cancer worldwide and the third most common cause of death from cancer. Pulse spectrum is an important diagnosis method in traditional Chinese medicine. If we can recognize hepatocellular carcinoma patients by means of scientific methods, it will improve the diagnosis and follow-up for hepatocellular carcinoma.

The purpose of this study is to determine the differences in pulse spectrum analysis between liver cirrhosis with hepatocellular carcinoma (HCC group) patients, liver cirrhosis without HCC patients (LC group) and sub-health individuals (control group). A pulse spectrum analyzer was used to measure radial arterial pulse waves of the subjects. Original data was then transformed to spectrum data by Fourier transformation. The relative strength of each harmonic wave was calculated according to Professor Wang Wei-Kung's resonance theory. In addition, we compared and contrasted the differences of harmonic values between the group of HCC, LC and control group.

This study collected 28 liver cirrhosis with hepatocellular carcinoma patients, 30 liver cirrhosis patients and 26 sub-health individuals.

Harmonic values of C1, C2 and C4 were significantly different ($p=0.003$, 0.001 , 0.038) between the HCC group, LC group and control group.

It can be concluded that there was some difference in pulse spectrum between the group of HCC, LC and control group. The difference can be detected by the pulse spectrum analyzer objectively. If we can study more in this field, we will be able to greatly improve the diagnosis and management in traditional Chinese medicine by means of scientific methods.

Key Words: pulse spectrum, hepatocellular carcinoma, resonance, frequency spectrum