Health Recovery Effect of Physiological Magnetic Stimulation on Elder Person's Immunity Source Area with Transition of ECG and EEG

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Abstract— A remarkable health recovery effect of the physiological magnetic stimulation (PMS) for an elder person suffered from the angina pectoris is presented, in which four conditions out of five indices of the metabolic syndrome were normalized through two months. The PMS is carried out using a magnetized fayalite crushed stones crammed vinyl pipe with vibrating on the immunity source area of the thymus, the pit of the stomach, and the intestinal flora ("san jiao" in Chinese medicine). Mechanisms for the PMS effect are discussed with the magneto-protonics principle considering transition of the measured electro-encephalogram (EEG) and the electro-cardiogram (ECG) before and during the PMS.

1. INTRODUCTION

We have found a safe and remarkable arousal effect of a physiological magnetic stimulation (PMS) putting a magnetized fayalite crushed stones crammed vinyl pipe to spine position of elder persons during car driving [1]. The arousal effect is confirmed for two elder men subjects using a driving simulator and measurements of the electro-encephalogram (EEG) at four points on the subject's head with increase of FFT frequency spectrum components $\beta/(\theta + \delta)$ [2]. Mechanisms for arousal are explained with the magneto-protonics principle [3–5], in which the serotonin generated from the medulla in the central nervous system using increased ATP with the PMS activates the cerebral limbic system [1, 2, 6]. On the contrary, we tried to apply the PMS to the immunity source area of the human body on which the magnetic pipe is vibrated by a hand for health recovery to improve the Health-Related Quality of Life in aging society. For the purpose, we selected three areas of the thymus, the pit of the stomach, and the intestinal flora because that these areas are traditionally well known as the functional metabolic organ; san jiao, triple heater in Chinese medicine [7].

2. EXPERIMENTAL PROCEDURE

Figure 1 illustrates magnetized fayalite crushed stones crammed vinyl pipes with three kinds of length of 20 cm, 30 cm, and 40 cm and their surface magnetic field distribution measured using a MI magnetic sensor [8]. The pulse distributed magnetic field having steep change in around 10 mm is effective to generate the magneto-protonics principle for bio cells such as the blood cells and the nervous transmission cells at the san jiao area, in which free protons generated in transmitting bio-cell water with an extremely low frequency (ELF) magnetic field activates ATP synthase in the mitochondria. Patients oscillate the magnetic pipe by their hands on the san jiao area with around 2 Hz during around 1 min. time to time per day mainly after each eating. Patients do not need any specific guidance by a medical doctor on the diet and/or the exercise except the PMS.

3. EXPERIMENTAL RESULTS

3.1. Blood Pressures and Body Weight

Figure 2 represents recorded results of the systolic blood pressure (systolic BP), the diastolic blood pressure (diastolic BP), and the body weight of a patient (70 age man with 176 cm in height) through one year (October 1st, 2010 to September end, 2011) who has suffered from the angina pectoris and been operated a stent placement for his coronary artery stenosis at 6 years ago in the Nagoya University Hospital and then in the metabolic syndrome. A large fluctuation in blood pressure with between 120 and 200 mm Hg in the systolic BP and 70 and 115 mm Hg in the diastolic BP before applying the PMS has been normalized to between 80 and 120 mm Hg in the systolic BP and between 55 and 75 mm Hg in the diastolic BP after two months under the PMS. The



Figure 1: Pulse distributed surface magnetic field generated from magnetized fayalite crushed stones crammed vinyl pipe of three length.



Figure 2: Transition of the systolic blood pressure, the diastolic blood pressure, and the body weight of 70 age man through one year with applying the PMS.

BP amount is an average of each successive three times measured values in the morning and the evening. Simultaneously, the body weight has linearly reduced from around 82 kg to around 74 kg during the two months without any specific guidance by a medical doctor on increase of exercise rate accompanied with a reduction of the waist circumference.

3.2. Blood Test Data and Metabolic Syndrome Indices

Transition of the blood test data concerning the metabolic syndrome defined by the American Heart Association (2004) [9] is listed in Table 1. The blood test by the Nagoya University Hospital has represented normalization of the HDL cholesterol and the glucose after 4 months with the PMS although the Triglycerides is still in abnormal. The four indices out of the five indices of defined

70 age man	4 months	1 month	DMC 2 months	DMC 4 months	DMC 6 months
angina pectoris	before PMS**	before PMS	PM5 2 months	PM54 months	PM5 0 months
(Standard value)*	2011, Jan.	2011, April	2011, July	2011. Sept.	2011, Nov.
Waist					
Circumference	$104 \ \mathbf{H}$	$105 \ \mathbf{H}$	94	92	90
$(\leq 102 \mathrm{cm})$					
Triglycerides	910 U	155 U	179 U	195 U	195 U
$(\leq 150\mathrm{mg/dL})$	219 П	155 П	172 П	105 П	105 П
HDL cholesterol					
$(\geq 40 \mathrm{mg/dL})$	38 L	38 L	$35 \ L$	41	132
(men)					
Blood pressure	(130-200)	$(140 \sim 190)$	$(80 \sim 110)$	$(80 \sim 110)$	$(80 \sim 110)$
$(\leq 130/85\mathrm{mmHg})$	/(80-110) H	$ /(85 \sim 130) \ { m H} $	$/(60 \sim 70)$	$/(60 \sim 70)$	$/(60 \sim 70)$
Glucose ($\leq 100 \mathrm{mg/dL}$)	127 H	115 H	113 H	85	85

Table 1: Transition of five indices of the metabolic syndrome with the PMS for 70 age man patient of angina pectoris.

Metabolic syndrome measurements

* American Heart Association (2004)

** Physiological Magnetic Stimulation on san-jiao. Blood Test Data are authorized by Nagoya University Hospital



Figure 3: Transition of 12-lead ECG V5 waveform, in which a flat T waveform before the PMS as in (a) recovered to steeper T waveform during the PMS in (b), (c), and (d).

metabolic syndrome has been normalized with the san-jiao PMS.

3.3. Transition of Electrocardiogram (ECG)

The damaged electro-cardiogram (ECG) waveform due to the angina pectoris and the metabolic syndrome has also been recovered with the PMS as illustrated in Figure 3. The twelve-lead resting ECG has been regularly recorded by Nagoya University Hospital every two month since 6 years ago for the patient. A flatness of the T wave reflects declination of the left ventricular diastolic function due to heart diseases and aging. The ECG system diagnosis changed from "suspicion of the inferior wall infarction, and loading impossible" before application of the san-jiao PMS to "boundary area,



Figure 4: EEG FFT spectrum of an elder man patient suffered from the angina pectoris : (a) without san-jiao PMS, and (b) with san-jiao PMS.

and loading possible" during two months with the san-jiao PMS due to recovery of the T wave.

3.4. Transition of Electroencephalogram (EEG) FFT Spectrum

The electro-encephalogram (EEG) FFT frequency spectrum of the angina pectoris patient is also recovered as illustrated in Figure 4.

The EEG FFT spectrum at patient's right of the head before the san-jiao PMS [1] is illustrated in (a). The spectrum pattern before the spine PMS shows δ wave (0.2–3 Hz; sleepiness) component plus θ wave (4–7 Hz; drowsiness) component rich pattern due to an old age and angina pectoris, which is activated with the spine PMS to β wave (14–40 Hz; active arousal) component rich pattern with the magnetoprotonics effect.

On the contrary, the EEG FFT spectrum shows already β (14–40 Hz; active arousal) rich pattern during the san-jiao PMS after four months even before the spine PMS as in (b). The β rich spectrum is further reinforced with the spine PMS. Similar remarkable effect of the san-jiao effect was observed at the top of head, the left of head, and the back of head.

4. DISCUSSION AND CONCLUSIONS

Remarkable health recovery effect of the san-jiao PMS using a magnetized fayalite crushed stones crammed vinyl pipe is found for an elder man patient suffered from the angina pectoris with normalization of four indices out of the five indices defined for the metabolic syndrome. The health recovery is also confirmed with transition of the ECG and the EEG. These systematic health recovery is considered to be due to the adjustment of the blood circulation with activated production of the blood cells and the nervous transmission material cells, the cardio muscle activation and vascular smooth muscle activation using the ATP which production is reinforced with the magnetoprotonics. The systematic investigation and evaluation of experimental (diagnosis) results including the blood test data authorized by Nagoya University Hospital for an angina pectoris elder patient would be a standpoint for progression of a project of normalization of the metabolic syndrome for elder persons with the san-jiao PMS.

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