

Fermented Herbal Decoction Improves a Performance Status of Skin Conditions by Reconstituting Peripheral Capillary

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Abstract

Background: Reduction in performance status of skin condition is one of the serious factors determining the prognosis of post-menopausal ladies. The purpose of this study was to investigate whether fermented herbal decoction (FHD) could improve the performance status of post-menopausal skin condition, inspecting capillary condition especially nail stem in the 4th finger of left hands.

Methods: Volunteers were randomly selected according to the Ethic Committee of Kanazawa Medical University. The FHD administration was started on the day of written informed consent and BMI, physical performance status of skin conditions were observed. The volunteers were inspected on 6 and 12 months after and cosmetic factors of the skin including regeneration of peripheral capillary by innovative microscopically inspection system of the skin.

Results: FHD (both via oral and derma) could significantly improve the performance status of volunteer ($p < 0.01$). FHD could increase the regeneration of the capillary of nail stem. An increase of the number was observed in the capillary reconstitution in a group after 12 months rather than 6 months. Another blood cell and biochemical data were sifted to appropriate level regarding life related disease.

Conclusions: FHD, especially via derma, could significantly improve digitally the performance status of skin condition especially capillary reconstitution.

Keywords: Capillary; Nail Stem; Digital Assessment; Skin Condition; Beauty Care; Cosmetic Condition

Introduction

Prolonged fatigue refers to persistent or repeated episodes of clinically unexplainable fatigue and oxidative stress that occur for a period lasting. Prolonged fatigue is a common condition in the general population, especially in elderly [1-4], while the prevalence of prolonged fatigue varies across communities. It is highly prevalent among working populations and young adults and elderly. Fatigue not only affects daily life and social as well as occupational functions but is also detrimental to oxidative stress [5-9] in the long term, and decreased quality of life and cosmetic condition. Thus, age-related retraction is a condition that requires early prophylactic intervention and effective treatment. Further to diagnose age-related regression in blood channel especially peripheral capillary, the purpose of this report was to clarify a digital scale by an age-related capillary condition of 4th finger-tip of left hand. The aim of this study was also to conduct a pilot randomized clinical trial to assess cosmetic condition through the product from alternative medicine [10-24]. For this purpose, we selected fermented decoction, FHD was considered as the preferred candidate for regeneration of capillary development. Therefore, we tried to develop novel cosmetic jell in order to much greater activity plus oral route. To this end, we made modifications to combine by

for evaluating their further experimental analyses revealed that cosmetic effect through regenerating capillary condition [25-29]. We also performed detailed analysis on the cosmetic condition such as heel, wrinkle, gray line, water retention rate of cell, freckles, together with nail stem capillary.

Volunteer and Methods

Study design

A randomized semi-clinical trial was conducted to assess the capillary length and in age related value before and after administration of FHD. All participants underwent informed and consented according to the Ethics Committee of Kanazawa Medical University.

Participants

10 volunteers were recruited from normal healthy condition. They were written informed and consented according to the Ethics Committee for University Hospital screened by questionnaire and interview. Eligible participants were working adults between the ages of female volunteers.

Detecting Machine

The digital approach for the evaluation was important such in alternative medicine [10].

In such sense, we set up and employed the digital two major machines in this study.

InBody Data Managing System

In order to analyze the component of each volunteer in the digital value, InBody Data Managing System was employed in this research. With this system, the analysis had been made for the skeletal muscle, fat assessment for fatty degree, plus muscle balance.

with the InBody 270, InBody [USA], CA, USA.

Capillary Scope

We prepared special detecting machine for dynamic flow of red blood cell in capillary in nail stem, Capillary scope SC-10 (At Co, Ltd. Osaka, Japan).

The forth fingertip of left hand was set up this apparatus after pasting vegetable oil. In this trial, the dynamic flow of red blood cell as well as static size of capillary were digitally recorded as a scale of cosmetic condition of the skin.

Capillary Analysis

Together with providing information on capillary length and twists, capillary analysis checks for disturbances in your lifestyle as well as the circumstances behind general malaise, thereby identifying any abnormalities in one's capillary. In the book *Clinical and Capillaries* by Ogawa, as well as in medical techniques such as ophthalmoscopy, capillaries are used as an indicator for diagnosing lifestyle related diseases [21-25]. The capillary scope was a type of equipment that can digitally observe capillary blood flow without subcutaneous injection. The check point of this apparatus were aimed as followed in:

Five main check points of assessments were

- Length of capillaries in nail stem
- Remodeling of capillaries
- Number of capillaries
- Follow up the congestion in hair pin corner
- Dynamics of blood cell flow

These were checking factors of capillary by this device. Images and video can be prepared simultaneously non-invasive style. Detailed patient information (name, age, sex, opinions, comments, etc.) can be interviewed afterwards, and can be confirmed during subsequent measurements.

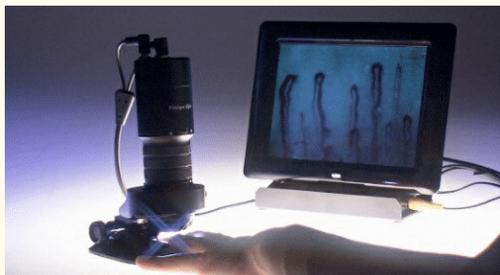


Figure 1: Digital assessment for static and dynamic images of capillary. The capillary scope was a type of equipment that can digitally observe capillary blood flow without subcutaneous injection.



Figure 2: Preparative style of check point in finger. The forth fingertip of left hand was set up this apparatus after pasting vegetable oil. In this trial, the dynamic flow of red blood cell as well as static size of capillary were digitally recorded as a scale of cosmetic condition of the skin.

FHD Preparation, Fermentation and GABA Generation

Commercially available 80 sorts of wild herbs were prepared and extracted by 100 ml of hot water (98°C) to 10 gr grained the roasted material. for 3 minutes. The fermentation was carried out by *Lactobacillus leuteria* for 5 days at 40°C. Each ratio of powdered, lactobacilli and water was 100:50:850, prepared by ECHIGO YAKUSOU, Ltd. Niigata, Japan). After the centrifugation of 2000 xg for 10 minutes in a room temperature and supernatant was served for FHD. GABA: gamma amino acid butyric acid was evaluated by the test system [26,27]. Followings were the method for quantifying γ -aminobutyric acid, which comprises the steps of producing reduced nicotinamide adenine di-nucleotide phosphate by using a specific aminotransferase and a dehydrogenase that needs to use oxidized nicotinamide adenine di-nucleotide phosphate as a coenzyme and deactivating the enzymes, thereby removing any amino acid having a similar structure to that of

GABA and acting an electron carrier on NADPH produced in the aforementioned step in the presence of a tetrazolium salt that can produce a water-soluble formazan dye and measuring the water-soluble formazan dye described and reported in references [26,27].

Statistical analysis

This study was a pilot study to determine the appropriate sample size required for a large-scale randomized semi-clinical trial of individuals. In a previous study that assessed the efficacy of a similar intervention, the minimum required sample size was 10 for each arm of the study [8]. A p-value of less than 0.05 was considered to be statistically significant. Statistical analyses were performed using SPSS 22.0 (IBM, Chicago, IL, USA).

Results

InBody Data Managing System

10 individuals were assessed for eligibility and met the inclusion criteria. They were written informed and consented according to the Ethics Committee for University Hospital screened by questionnaire and interview. The participants were randomized to each group. Two participants in the group were lost to follow-up (two participants at 11 months). In order to analyze the component of each volunteer in the digital value, InBody Data Managing System was employed in this research. With this system, the analysis had been made for the skeletal muscle, fat assessment for fatty degree, plus muscle balance, with the InBody270. Seven volunteer were finally nominated in this trial. The summarized scorers were in table 1. All the volunteer were recorded as up regulation by the digital score compared with the stating value to ending score.

Volunteer Name		Y.O.		J.o.		M.Y.		E.M.		F.A.		9.M.		K.O. 1	
Check Point	N. Range	Bef	Mt	Bef	Aft	Bef	Mt	Bef	Mt	Bef	Aft	Bef	Aft	Bef	Aft
lithe moist. (E)	17.0-20.8	18.0	17.7	16.6	17.1	16.6	16.3	18.0	17.0	15.8	16.0	17.1	17.4	15.7	15.8
Inter moist. (E)	10.4-12.8	11.7	11.4	10.2	10.5	10.4	10.2	11.4	10.9	10.2	10.4	10.9	10.9	10.0	10.2
Protein (kg)	7.4-9.0	7.8	7.7	7.2	7.4	7.2	7.0	7.8	7.4	6.8	6.9	7.4	7.5	6.8	6.8
Mineral (kg)	2.53-3.09	2.88	2.87	2.64	2.65	2.44	2.43	2.68	2.66	2.32	2.33	2.66	2.56	2.42	2.43
Body Fat (kg)	10.8-17.2	13.9	14.6	38.3	39.1	11.9	13.9	15.2	17.5	18.8	18.5	18.8	18.7	17.4	17.7
BMI (kg/ni)	18.5-25.0	21.2	21.2	31.8	32.6	20.7	21.3	22.7	22.7	24.6	24.7	22.8	22.9	22.4	22.6
Waist/Hip Ratio	0.70-0.80	0.91	0.91	1.01	1.02	0.93	0.94	0.89	0.90	1.03	1.03	0.95	0.95	0.97	0.98
Freak (%)		36	38	20	38	27	29	36	67	11	20	45	36	36	62
Wrinkle (%)		96	91	79	67	99	20	85	87	32	2	51	57	94	96
Texture (%)		71	82	51	46	83	51	79	94	26	13	66	56	71	91
Pores (%)		51	66	62	42	71	75	73	88	78	89	85	82	75	89
Porphyrm (%)		94	99	45	26	99	96	99	99	99	99	99	91	99	99
Merit No		4		4		4		5		2		1		4	

Table 1a: Final Score after FHD Treatment. Bef: Before, Aft: After.

Volunteer Name		Y.O.						
Check Point	Range	Score						
Intra-moist. (e)	17.0-20.8		+	±		+	+	+
Inter-moist. (1)	10.4-12.8		+			+	±	+
Protein (kg)	7.4-9.0	±	+			+		
Mineral (kg)	2.53-3.09	±	±	±		+	+	
Body fat (kg)	10.8-17.2					+	±	+
BMI (lighd)	18.6-26.0							
Waist/Hip Ratio	0.70-0.80			±		±	±	
Freak (point)			++	+	+++	i ++		+++
Wrinkle (point)		-	-	*	+	*	+	+
Texture (point)		++	-		++	-		++
Pores (point)		++	-	+	++	+		+++

Table 1b: Total Score of Judgement.

Table 1: InBody Data Managing System

In order to analyze the component of each volunteer in the digital value, InBody Data Managing System was employed in this research. With this system, the analysis had been made for the skeletal muscle, fat assessment for fatty degree, plus muscle balance.

Capillary Analysis

Remodeling of capillaries

The common image of capillary in finger-tip of 4th finger in left hand were strait forward and parallel arraigned along with the finger image. A remodeling was found at least 40th ager implicating some bias should be made in the flow of the peripheral blood. The capillary length was enhanced and clear up the images in covered area in red. The remodeling was in low grade rather than the before.

Length of Capillaries

The image in capillary in 4th finger finger-tip of left hand were strait forward and parallel arraigned along with the finger image. The length of capillary was shorten elsewhere suggesting strong bias was found in the peripheral flow. In case of volunteer in figure 3a, the length of capillary became longer and more, clear the capillary images.

Number of Capillaries

The common image of capillary in finger-tip of 4th finger of left hand were strait forward and parallel arraigned along with the finger image. The resolution images were gradually fade out along with ager. The number of capillaries were increased after FHD treatment.

Dynamics of blood cell flow

The common image of capillary in finger-tip of 4th finger of left hand were strait forward and parallel arraigned along with the finger image. Employing this apparatus, dynamic images along with static one was available. The dynamic of blood flow in the capillary could be available as digital movies. According to the digital movies, blood cell flow was changed along with age, confirming the decreasing of metabolic rate in the periphery. This should be problems of maintain cosmetic condition for female as well as male. In case of volunteer in figure 3c, A lot of congestion point were found in the top/hair pin of capillaries (circled in red). After treated with FHD, the congestion point was decreased *in situ*.



Figure 3a: M.Y.

The capillary length was enhanced and clear up the images in covered area (red).

Figure 3b: Y.O.

The number of capillaries were increased and clear up their images.

Figure 3c: S.M.

Regression of Congestion points were found in the hair-pin curve (red).

Figure 3: Therapeutic Change in the Capillary.

Detailed patient information (name, age, sex, opinions, comments, etc.) can be interviewed afterwards, and can be confirmed during subsequent measurements.

Discussion

In this randomized semi-clinical trial, we compared and analyzed the length of the capillary was reliable marker for the age-related parameter of skin condition together with blood cell and biochemical analysis. The volunteers were all written informed and consented according to the Ethic of Committee of University Hospital. From the kinetic of capillary length for both sex, the male one was significantly longer than female one. It was interesting to discuss what biological significance of this difference. Moreover, dependence of the length was much faster on after 30th age, suggesting turning to start menopause. This phenomenon also interesting for biological significance. This critical turning point was also evident by the responsibility of leucocyte regulation according to the effect of CAM therapy such as hot spring hydrotherapy, walking and acupuncture and moxibustion [26-31]. Finally, our capillary monitoring was obtained from the special digital apparatus, such that there were numerous active scale potentially mediating the observed efficacy in prolonged fatigue. It will be useful in future studies to identify these active scale and screening cosmetic device and liquid for future. Every developed countries had faced long-lived persons as to advance in medical science and medical care medical insurance lot of death are vascular accident due to life-related diseases. In order to avoid the economic balance and people desire, the requirement is growing more and more attention to make desirable political balance to CAM issue [10-24]. Thus, it is particularly important to determine the prognosis of post-menopausal lady and their treatment efficacy and evaluation standard for each constitution. In prognosis and efficacy determinations, the evaluation of the performance status is very important. A poor performance status suggests a poor prognosis and worse efficacy and implies that patients will lose many chances for active treatment. If the performance status of cancer patients can be improved using active methods, it might be possible to increase treatment efficacy, improve prognosis, and prolong survival periods. However, modern medicine does not have particularly effective measures to improve performance status. Very few articles have considered that nutrition interventions could improve the performance status of patients from the nutritional perspective. As one of the major treatment methods in traditional Chinese medicine, FHD has been used in clinical settings for several thousand years. Modern studies also confirm that FHD can improve chronic fatigue syndrome and cancer-related fatigue (FHD). Therefore, we speculated that FHD might be able to improve the performance status of cancer patients.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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