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We decided to coin the world "Lifence" to express this.

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The rainbow colored sphere represents a safe environment and a barrier to protect us from negative influences.

The picture by Leonardo da Vinch represents a balanced body and health.

Completing our logos is a ring which represents the unity of space fulfilling the total meanings of lifence.

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MISSION

To disseminate peer-reviewed information on the use of acupuncture and herbs, and integration with western medicine, based on research from an international perspective; thereby stimulating further research, application of documented therapeutic measures; and facilitating dialogue among health care practitioners worldwide.

小太郎漢方製薬株式会社

漢方を
近く
より多くの人に

KOTARO PHARMACEUTICAL introduced in 1957 the world's first Kampo extract preparations on the market. Later, in 1967, six of our preparations could be covered in Japan for the first time by the health insurance and after 1976 more than 100 of our preparations were used in hospitals and clinics. Now it is half a century since we put our Kampo extract preparations on the market and believe, we made a major contribution to this industry.

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The company was named "KOTARO" by its founder Taro Ueda with reference to his birth place. Close to the ancient city of Nara. Kotaro is the name of an enormous sheer cliff, 700 m wide and about 200 m high. Mr. Ueda felt an affection rising to the heavens for this cliff and thus made it the company's name.

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Editorial

Kampo Medicine and Clinical Pearls

Medicine of the Ming Dynasty, introduced from China to Japan in the mid 16th century, was the mainstream of Japanese medicine for about 200 years thereafter. However, just after its introduction, many doctors created their own Clinical Pearls and applied them for diagnosis and treatment, whereby this medicine gradually began to "Japanize" and subsequent Kampo doctors adopted it. Clinical Pearls of this era were mainly made to understand TCM theory.

When Todo Yoshimasu (1702-1773) appeared in the 18th century, that situation changed completely. He denied the diagnostic treatment system which had used the TCM theory up until that point, and devised a new system which emphasized the indication of prescription.

He diagnosed without using traditional theory and prescribed without using traditional pharmacology. In his case report collection, traditional theory is not seen, only symptoms and prescriptions are noted. So, what were his treatments based on? What he emphasized most was abdominal diagnosis. It is also difficult to understand how he prescribed treatments based on what he wrote.

From many anecdotes, it is clear that he was a very good physician. However, there is no evidence of him using System 2 represented by the TCM theory at all. His clinical reasoning seems to consist almost entirely of system 1 from our present viewpoint.

The people of the generation after Yoshimasu could not understand his system 1 background. So what they did was carefully observe the items necessary for clinical practice, create a useful Clinical Pearl, and then give prescriptions based on that content. As a result, from the late eighteenth century to the mid nineteenth century, many Kampo Doctors created a tremendous number of Clinical Pearls.

These Clinical Pearls were studied during the Kampo reconstruction period of the 1930's, and they became the basis of modern Chinese medicine. The research of Clinical Pearl's is indispensable for understanding Japanese herbal medicine. This is because they are the background of System 1.

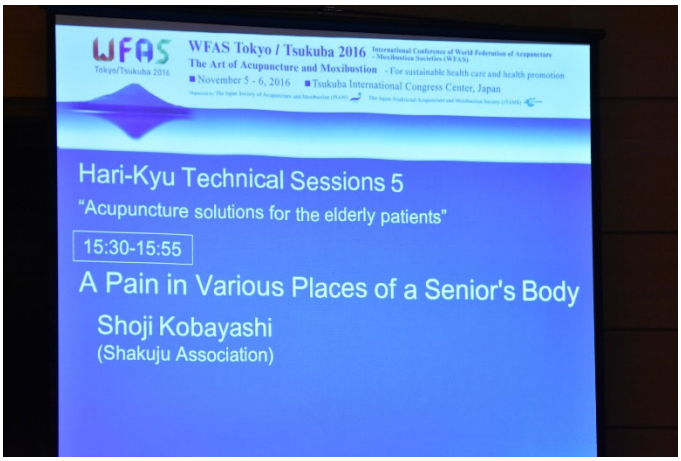
Hiromichi Yasui
Japan Institute of TCM Research

Report from WFAS Tokyo/Tsukuba 2016

Shakuju Treatment
Shakuju Association

Introduction

In regard to "Shakuju" treatment all diseases are viewed as a "decrease in vital energy" as the singular source of all diseases, where the acupuncture and moxibustion treatment is administered for the purpose of recovery. The degree of this decrease in vital energy is assessed mainly on the basis of the palpation of abdominal masses and the back transport points are then used to promote the recovery. The treatment procedure using just one needle without retaining it, relies on the maximal application of the therapists consciousness to achieve optimal recovery.



[The birth of Shakuju treatment]

Shakuju treatment is an acupuncture and moxibustion treatment method formulated in 1976 by Shoji Kobayashi. Originally Mr. Kobayashi performed his acupuncture and moxibustion treatment based on pulse diagnosis, but later started to harbor doubts about the theory and practice and thus developed his own original acupuncture and moxibustion treatment style.

At that time he served as a lecturer at the Kanto Acupuncture and Moxibution Vocational School in charge of practical skills. During practical training sessions dealing with pulse diagnosis is inevitable, but very little objective training material was available for the purpose of practical training among the students and since the acquisition of the relevant practical skills required much time, he started looking for something that might serve as a replacement. Practical training requires something that can easily be employed among the students, be based on the theories pertaining to qi and yin-yang, not being perturbed by age, sex or pathology, is applicable to all patients and helps the students to establish themselves after graduation as clinicians. In this situation he focused on abdominal diagnosis. So far assessment of anomalies of the channels (deficiency – excess), pulse diagnosis and the implementation of the rules laid out in the difficult issue No. 69 had formed the basis of channel treatment. Kobayashi himself noted, that the back transport point could be grouped and classified in a 5-phase manner. The abdominal diagnosis according to the 5-phase theory allowed to group abdominal masses into five regions and assess them accordingly, so that the 5-phase findings of the abdomen and the 5-phase regions of the back can be applied to the use of the back transport points, leading to the discovery that this will improve the condition of the abdominal masses and chief complaints and therefore was formulated as a therapeutic system. Later, this came to be known as Shakuju treatment (abdominal aggregation treatment). The Shakuju treatment was

developed in 1980 at the Kanto Acupuncture and Moxibution Vocational School by the independent study group "Hikobae (sprout) Shinryo Kai", later in 1986 renamed into "Acupuncture and Moxibustion Shakuju Kai" and finally into 1988 "Shakuju Kai", which since then continues until today to improve the techniques and promote awareness of the Shakuju treatment.

The term "Shakuju" used in the name Shakuju treatment originates from the Difficult Issues Nos. 16, 55 and 56. Shakuju refers to abdominal anomalies that are divided into easily movable, superficially located "Ju" and fixed deep "Shaku" types of abdominal masses, but the Difficult Issues (Nan Jing) does not describe ways of curing (treatment) these anomalies. Here Kobayashi defined a way of distinguishing Shaku and Ju based on his personal clinical experiences. Performance of non-penetrating needling over the entire abdomen brings about changes in these Shakuju phenomena and the use of command points on arms and legs selected based on pulse diagnosis then gave him the actual feeling of changes occurring in these Shakuju. He then went on and defined those abdominal anomalies alleviated by the abdominal non-penetrating acupuncture and subsequent adjustment of the pulse as Ju, while remaining anomalies were termed Shaku. Moreover, since the treatment starts with mild stimulation and gradually processes towards stronger stimuli, the burden on the patient is low and at the same time it became clear, that the proceeding from superficial stimulation of the body towards deeper levels in this order (skin and hair → blood vessels → muscle flesh → sinews → bones) achieves better results. This led to the establishment of a treatment routine comprising of pulse adjustment of the pulse the non-penetrating needling of the abdomen and then using back transport points depending on the condition of the remaining Shaku in the abdomen.

[Shakuju treatment (basic treatment) procedure]

Restricting the description only to the treatment (needling) shows the following sequence.

Procedure of the basic treatment	
1	Abdominal non-penetrating acupuncture
2	Pulse adjustment
3	Abdominal diagnosis
4	Treatment using back transport points
5	Treatment of the shoulders

(1) Abdominal non-penetrating acupuncture

Abdominal non-penetrating acupuncture refers to getting an impression of the abdominal surface and performing non-penetrating acupuncture over the entire area. Regarding the needle handling the moment the thumb and index finger of the pressing hand and the tip of the needle held by the needling hand come into contact with the abdominal surface the typical shape of the pressing hand is formed and thus the needle tip brought into contact with the abdomen. After the contact is made apply some soft palpation with the index finger of the pressing hand (which is referred to in the Plain Questions (Su Wen) in the chapter about open and closed supplementation and drainage as a reinforcing technique). As described above this movement does not bother about acupoints, but makes contact randomly. Make sure to keep a coin-sized space between the contact locations. Once you get used to the procedure, it becomes possible to successively make contact at sites of anomalies (the presence of tension, weakness, feeling of warmth or cold, skin gloss etc.) based on the sensation of the pressing and needling hand.

(2) Pulse adjustment

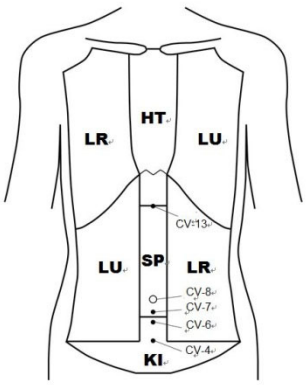
LU9 or PC7 are used to adjust the pulse.

Originally, deficiency and excess of the organs and viscera is assessed by using the three bilateral radial pulses for pulse diagnosis and then the five phase points of arms and legs are selected based on the

principles given in issue No. 69 of the Difficult Issues. After that it is possible to rely solely on the source points based on experience. Today we know, that the two points LU9 (meeting point of the vessels of the eight confluence points) and the source point PC7 of the pericard channel can regulate the pulse. When using the left and right cun position over the radial artery for up to two deficiency and excess conditions the two LU9 points are sufficient, but in case of more than three such conditions, they are dealt with using PC7.

(3) Abdominal diagnosis (determination of Shaku)

For the abdominal diagnosis we use the distribution of the five organs according to the Difficult Issues, but since the Difficult Issues do not provide an elaboration of that distribution, Kobayashi repeatedly made his own experiments and thus clarified the various regions of the abdomen while referring to the course of the channels and locations of the acupoints.



In the Nan Jing the Shakuju are classified based on pain, hardness and pulsation into three groups, where anomalies can be discerned by abdominal diagnostic palpation as well as by the patient subjectively.

Types of Shaku

Painful masses (subjective pain > pain found during abdominal diagnosis)

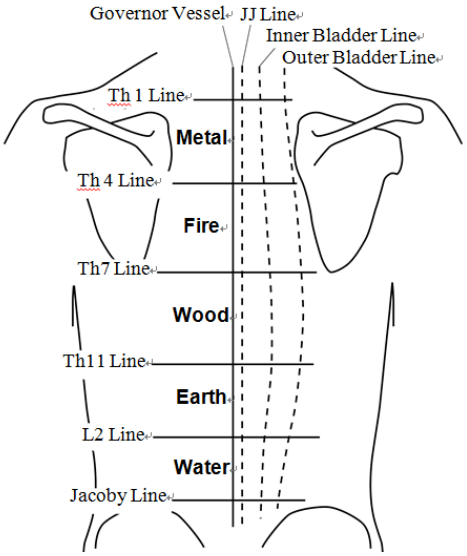
Firm masses (hardness found during abdominal diagnosis)

Pulsating masses (pulsation found during abdominal diagnosis)

Among the above listed items painful masses have the highest priority and the region of the most notable pain determines the type of mass (liver mass, heart mass, spleen mass, lung mass, kidney mass).

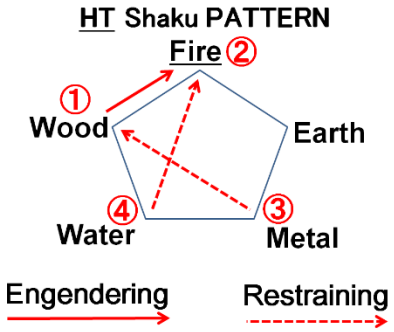
(4) Treatment using the back transport points

The type of mass (liver mass, heart mass, spleen mass, lung mass, kidney mass) determines the used back transport points. Kobayashi discovered that the arrangement of the back transport points can be divided into five regions similar to the distribution of the five organs on the abdomen.



Since the arrangement of the five organs in the abdomen can be used in a 5-phase based manner, the principles given in the Difficult Issue No. 69 of the Nan Jing (in case of deficiency reinforce the mother) can be applied. For example, if the abdominal diagnosis reveals a spleen mass and because the

spleen is associated among the five phases with earth, points in the fire region of the back transport points corresponding to the mother function for the spleen and earth points because the spleen itself being the earth phase among the five phases are selected. Since fire and earth are restrained by water and wood (they have a restraining correlation), points from these regions are also selected. A total of 4 points in the order of fire → earth → water → wood are thus selected.



The back transport points are located along the governing vessel, immediately next to mid-line, first line of the bladder channel and second line of the bladder channel, but the Shakuju treatment focuses mainly on the second line of the bladder channel and selects one point each on this second line of the bladder channel for each of the four regions depending on the type of mass. For example, in the presence of a spleen mass, BL44 (fire) → BL49 (earth) → BL52 (water) → BL47 (wood) will be found upon palpation along the second line of the bladder channel to be the most depressed locations in the respective regions.

(5) Treatment of the shoulder region

After completing the treatment of the back transport points, depending on complaints and type of mass and after checking the pulse, the patient is seated and needled from the back up to the top of the shoulder region. For the point selection the top of the shoulders are palpated on left and right, the most tense spots (indurations) determined and the relevant point selected symmetrically on the opposite side. For example, when tension can be confirmed at right GB21, the left GB21 is needled. However, the point selection is not restricted to acupoints.

The above described steps from (1) to (5) are called basic treatment and are essentially used for all patients. A single filiform needle is used for the treatment and subsequently based on observations of physical changes following the restoration of the decreased vital energy one proceeds to the next step. Accordingly, needle retention is not used. The used needles are silver needles with a length of 40 mm and a thickness of 0.20 mm, having an egg-shaped needle tip. When needling while checking for physical changes, these are shaped, are of a material and thickness that makes insertion and handling easier than the usual filiform needles.

Ideally the basic treatment restores the decreased vital energy, but in cases where depending on the skills of the practitioner or the degree to which the vital energy had been decreased, recovery was insufficient, a supplementary treatment is administered. As a supplementary treatments like micropuncturing to led blood at sites of wounds causing the decrease in vital energy etc. are used, as the name already implies, to supplement the basic treatment in order to promote the recovery of the decreased vital energy. Representative examples of supplementary treatment are the use of filiform needles, blunt tip needles, heat sensing moxibustion or heat penetrating moxibustion at the back transport points and those located along the governing vessel, immediately next to mid-line, first line of the bladder channel and second line of the bladder channel.

[Degree of the decrease in vital energy]

It is very important to understand the degree of the reduction of the vital energy which is the central and all encompassing cause of all diseases in order to achieve also a central and all holistic restoration of the decreased vital energy through the Shakuju treatment. All information obtained through the four diagnostic methods are important indices helping to understand the degree of the reduction in vital energy, but apart from this information from the four diagnostic methods Kobayashi discovered based on his clinical experience another index called the K-points (Kobayashi point). The K-points appear like the Shakuju in the abdomen in people with decreased vital energy as tender or hardened reactive spots. Their locations are designated using acupoint or anatomical names. They are called points, but depending on the condition may be anything from rice grain to coin sized.

Introducing some K-points

SP9, LR12, LR8, medial epicondyle of femur, BL40, BL39, BL54, BL52, medial edge of the scapula, shoulder joint, coracoid process, sternocleidomastoidoid muscle, posterior edge of the ramus of the mandible

The degree of the decrease in vital energy can be expressed in four stages depending on the chief complaint, information from the four diagnostic methods and the emergence of K-points.

1. Appearance associated with chilling of the lower half of the body
2. Appearance associated with body surface heat of the upper half of the body
3. Appearance associated with chilling or heat inside the body
4. Appearance associated with chilling of the entire body

Among the aforementioned 4 points there is a tendency that things appear as described and (1), develop into (2) or (3) and then lead to (4). The degree of the decrease in vital energy too progresses from (1) and is worst at stage (4).

[Types of order for the use of back transport points]

The back transport points are used depending on the location of the mass following the principles described in the Difficult Issue No. 69, but on one day performing the Shakuju treatment Kobayashi noticed during the treatment of a patient with a tumor that the treatment did not achieve sufficient improvement. He tried to implement all the things he could think of, starting with the time for the treatment, yet still was not able to achieve improvements. At one time he intuitively reversed the order in which the back transport points are used (for example in case of a spleen mass the usual order would be fire → earth → water → wood, the reversal of which would be wood → water → earth → fire). Using this he started to achieve improvements even in cases in which so far no changes had been observed. Based on this experience he discovered the use of the back transport points in the reverse order for the treatment of conditions that are characterized by marked excess symptoms when viewed from a perspective of the deficiency-excess pair. Later, through additional examinations he started to employ four types of application sequences. Currently, these four treatment orders contribute to improvements in treatment efficacy related to the degree of decreased vital energy.

[Regarding treatment and consciousness]

The efficacy of acupuncture and moxibustion treatment varies depending on the skills of the practitioner, but in case of Shakuju treatment we experienced that the kind of awareness of the practitioner during the treatment also has a significant influence on the treatment effects. The practitioner should be aware of the body of the patient during the treatment. For example, in case of a patient complaining about gonalgia the

practitioner should direct her/his gaze towards the knee while treating the back transport points. On this occasion s/he does not only look, but rather imagine the structure of the knee joint in her/his mind, as if s/he is looking right through it.

The practitioner should also occasionally touch the knee and its surroundings. In this way s/he can make her/himself aware of the knee.

Once the practitioner gets used to the above described way of directing her/his awareness, s/he will also become aware of the own body and thus be able to channel qi energy through the own hands towards the patient. Ultimately, the practitioner absorbs heavenly qi into her/his own body and becomes able to direct the flow of this qi energy towards the patient.

Once the acupuncture and moxibustion skill have been sufficiently developed, marked treatment effects can be achieved even in short treatment times. And if the practitioner makes her/himself well aware of these skills, the efficacy can be still further improved. In order to sufficiently implement this awareness, sound technical skills and clinical experience are necessary. It is also necessary to cultivate one's imaginative powers through daily qi gong and breathing exercises.

[Decrease in vital energy]

Starting from a treatment style centering on pulse diagnosis Kobayashi developed his Shakuju treatment concentrating on the abdominal diagnosis and the back transport points described in the Nan Jing. Regarding the selection of the back transport points he also integrated the engendering and restraining theory, which at that time meant, that the theoretic foundation of the treatment took the deficiency-excess and reinforcement-reduction duality into consideration. Yet, treatment efficacy changed markedly by changing the order of the treatment of the back transport points. Also, based on clinical facts he reaffirmed the existence of the supreme ultimate concept manifesting as deficiency-excess (yin-yang) which then clarifies the theoretic foundation centering on a unified awareness of this supreme ultimate concept. This concept deals with life force and its decrease. Kobayashi has so far used a variety of unified expressions for the essentials of the Shakuju treatment. The first book by Kobayashi published in 1987 about the Shakuju treatment "Lectures About Oriental Medicine, Vol. 10, Shakuju Treatment Compilation" (Shizen Sha) already allowed the reader to gain some glimpses into the theory, but now this theory has been elaborated and clarified in the "Shakuju treatment – Move qi and alleviate cold" published in 2001 (Idononippon Sha). In the "Huang Di Nei Jing", the classic can be called the foundational text of traditional Chinese medicine, the character combination 'yin-yang' is frequently found and thus shows that the yin-yang concept had been used in medicine.

However, the two characters expressing the concept "supreme ultimate" are not found in the "Huang Di Nei Jing". The can be found in the "I Ching" though. Kobayashi changed the pulse diagnosis centered style based on his clinical experiences to a treatment style relying on abdominal diagnosis and the use of the back transport points. The sequence of events which led to the theory pertaining to vital energy currently attracting much attention was probably strongly influenced by Kobayashi's study of "divination". The Kanto Acupuncture and Moxibution Vocational School at which Kobayashi taught, had been established by the diviner Mitsutake Kobayashi. At that time Mitsutake Kobayashi thought that if he were to study medicine as a diviner, the form of medicine he would like to learn should be influenced by oriental thought (concepts of divination), which inevitably meant, he had to call on a vocational school for acupuncture and moxibustion. However, the curriculum in vocational schools for acupuncture and moxibustion was more influenced by western medical concepts than oriental concepts (concepts of divination). Disappointed Mitsutake Kobayashi

decided he had to rise to the task of establishing a school to study acupuncture and moxibustion based on oriental concepts (concepts of divination). Mitsutake Kobayashi calling on Kobayashi, who has a teaching license for acupuncture and moxibustion schools, was the beginning of their connection. Over the three years it took until the opening of the school Kobayashi learned the basics of divination from Mitsutake Kobayashi. Groping for improvements in acupuncture and moxibustion treatment Kobayashi was convinced through his study of divination that there is conclusive evidence of a correlation between divination and acupuncture and moxibustion treatment. Doubtlessly oriental thought (concepts of divination) is currently strongly influencing the Shakuju treatment. Kobayashi published in 2010 the book "Introduction to the Book of Changes for Acupuncture and Moxibustion Treatment" (Midori Shobo) describing the correlation between acupuncture and moxibustion treatment and divination.

[Current Shakuju treatment]

The Shakuju Society has conducted activities mainly in the Kanto region to popularize the Shakuju treatment, but Kobayashi also made a demonstration of the technique during an invited lecture held in 1988 in San Francisco at the Japanese-American Acupuncture Foundation (JAAF). Since 2004 Shakuju treatment seminars were held in Boston on the American East Coast mainly by Kobayashi himself as well as other members of the Shakuju Society as lecturers. So far more than 10 such seminars (over a period of more than 10 years) were held and in recent years other seminars were held mainly by the vice president of the Shakuju Society Osamu Hara and the head of the academic department Tetsu Nakatani. Also, at the NESA Acupuncture Treatment Center in Boston the Shakuju treatment has formally be integrated into the coursework and is taught mainly by Diane Juliano.

Seminars were also held on the West Coast in San Francisco, in Hawaii, at Acupuncture & Integrative Medicine College (AIMC) under the tutorship of Diano Juliano. In 2017 Daiki Takahashi of the Shakuju Society, who is also a teacher at the Goto College of Medical Arts and Sciences as a sister school of the AIMC, also held a seminar.

Kampo Medicine – Current Research

The Traditional Herbal Medicine Boiogito (Fang-Yi-Huang-Qi-Tang) Slows Postprandial Oxidation of Ingested Glucose Only in Women

Koichiro Tanaka[1], Hiroshi Uchino[3], Kazuhiko Nara[1], Yoshifumi Irie[1], Takahisa Hirose[3] and Yoshihisa Urita[1,2]

1) Department of Traditional Japanese Medicine, Department of General Medicine and Emergency Care, School of Medicine, Faculty of Medicine, Toho University
2) Division of General Medicine, Department of General Medicine and Emergency Care, School of Medicine, Faculty of Medicine, Toho University
3) Division of Diabetes, Metabolism and Endocrinology, Departement of Internal Medicine, Toho University School of Medicine, Tokyo, JAPAN

Corresponding Author: Hiroshi Uchino M.D, Ph.D.[3] (h.uchino@med.toho-u.ac.jp)

Main Messages

1. Highlights the gender specific effect of ingested glucose oxidation of traditional herbal medicine, *Boiogito* (BOT), which has been used to treat various metabolic diseases.
2. BOT decreased postprandial glucose oxidation only in women.
3. The gender difference in the effect of glucose oxidation may not be mediated by neither insulin nor incretion dependent pathway.

Areas of Uncertainty

1. Patients with metabolic syndrome and diabetes are needed to determine the precise effects of BOT on energy metabolisms and substrate oxidation rate.
2. The mechanism for gender difference should be identify precisely.
3. Substantial number of the patients and long term effect should be done in the double blind fashion, to confirm the further benefit of the BOT.

ABSTRACT

Objective: *Boiogito (BOT, Fang-Yi-Huang-Qi-Tang)* is a traditional herbal medicine and used to treat metabolic diseases in Asia, especially in women. We evaluated the gender specific effect of *BOT* on postprandial glucose and lipid metabolism with incretin axis.

Research Design and Methods: Age and BMI matched subjects (6 men and 5 women) were evaluated for 2 weeks *BOT* treatment on postprandial glucose, lipid metabolism and incretin axis on meal tolerance test with ^{13}C-glucose breath testing to measure glucose oxidation rate.

Results: *BOT* significantly decreased glucose oxidation rate only in women. Postprandial glucose, triglyceride, NEFA, RLP-c and active-GLP1 were not affected by *BOT* administration in either sex.

Conclusions: Traditional herb, *BOT* appears to decreased postprandial glucose oxidation only in women. The gender difference in the effect of glucose oxidation may not be mediated by neither insulin nor incretion dependent pathway.

(Japanese Clinical Trials Registry, No. UMIN000016493)

KEYWORDS: *Boiogito*, glucose metabolism, glucose oxidation, women

Introduction

Metabolic syndrome (MetS) is a cluster of diseases and disorders that increase the risk of developing cardiovascular diseases and diabetes mellitus. The prevalence of MetS is increasing in the populations of not only in obese Caucasian, but also in non-obese Asian, which has resulted in considerable medical and social problems.[1] Obesity is not a sole problems for MetS, while the body mass index (BMI) cut point for screening Asian Americans for prediabetes and diabetes likely to be lower than Caucasians.

Boiogito (BOT, Fang-Yi-Huang-Qi-Tang) is a common formulation in traditional herbal medicine in east Asian countries [5,8] and has been used to treat obesity, fatigue, hyperhidrosis, edema of lower extremities, oliguria, and arthralgia.[8] Shimada, et al. reported that *BOT* had a preventive effect on metabolic disorders in the Tsumura, Suzuki Obese

Diabetes (TSOD) mouse, a model of spontaneous obese type 2 diabetes. In addition to these, BOT is more often used in women than in man.[11] However, if any, few reports have examined how *BOT* improves whole body energy substrate metabolism in such conditions. Thus, we initially investigated the effects of *BOT*, particularly its effects on postprandial glucose and lipid metabolism to clarify the difference of gender

Methods

Subjects

Eleven healthy volunteers, sex (6 men and 5 women), age (36± 11.3 years) and BMI (21.5 ± 2.4) matched, were enrolled in the single center parallel designed trial. No participant had medical treatment, including diabetes mellitus and hyperlipidemia in the 6 months before the start of this study. The protocol of the study was approved by the Ethical Committee of Toho University School of Medicine (No. 21038), University Hospital Medical Information Network; UMIN Clinical Trials Registry, Number UMIN000016493.

Boiogito

BOT is a powdered, freeze-dried water extract and was purchased from Tsumura Co. Ltd. (Tokyo, Japan). According to the manufacturer's instructions, the standard daily dose of *BOT* for adults is 7.5g of powder, which comprises a mixture of 6 decocted medicinal herbs (g): *Sinomenium stem* (5.0), *Astragali radix* (5.0), *Atractylodis rhizoma* (3.0), *Glycyrrhizae radix* (1.5), *Zingiberis rhizoma* (1.0) and *Zizyphi fructus* (3.0). Participants were given *BOT* 3 times a day (2.5 g per dose) for 2 weeks.

Test meal (cookie test)

A test meal consisted of 30 pieces of solid test cookies, which in total consisted of 75g carbohydrate (85% flour starch, 15% maltose), 28.5g butterfat, 1.6g fiber, and 8.0g protein and contained 592 kcal (Neocookie; SARAYA Co.Ltd., Osaka, Japan).[3]

Laboratory testing

Venous blood was sampled from each participant using a conventional method every 30 min from 9:00 AM to 12:00 PM (7 times in total). Plasma concentrations of glucose, insulin, triglyceride, free fatty acid (FFA), active glucagon-like peptide-1(GLP-1) and remnant-like particle cholesterol (RLP-C) were measured.

^{13}C-glucose breath test

^{13}C-glucose breath testing is non-invasive, simple method to detect dynamic alteration of metabolism.[2,7] Based on the previous researches, this test had been performed as done with other herbal medicine.[9] Briefly, on the day of the test, each participant took the last dose of *BOT* at 8:00 AM and ate the test meal between 8:30 and 8:45 AM, along with 200 ml of tap water containing 100mg of [1-^{13}C]-glucose (Otsuka Pharmaceutical Co. Ltd. Tokyo, Japan). Breath samples were collected every 10 min for 180 min, starting at 9:00 AM. Baseline (*i.e.*, without ^{13}C) breath samples were collected before 8:30 AM. Stable isotope ^{13}C enrichment in each sample was measured, and the glucose oxidation rate of each participant was calculated as previously described.[4] ^{13}C enrichment was measured as the tracer to tracee ratio and was expressed as Δ over baseline per mil (‰) using a non-dispersive infrared isotope spectrometry device (UBiT-IR 300; Otsuka Electronics Co.,Ltd., Osaka, Japan).

The results were converted to percentage $^{13}CO_2$ recovery in breath per hour (% dose/h) based on body surface area (BSA) and the assumed CO_2 production (VCO_2) as follows:

% dose/ hour =Δ‰×VCO_2 ×0.01123×10/dose(mg) × atom% excess(APE)/molecular weight(MW) where MW is 46, VCO_2 is 300 (BSA mmol/hour, BSA(m^2) is $0.024265 \times \text{weight(kg)}^{0.5378} \times \text{height}^{0.3964}$ (cm), A (dose) is 80mg and APE is 99.5 atom%. Maximum concentration (C_{max}; %dose/ hour), time to maximum concentration (T_{max}; min), and area under the curve

(AUC) at each time point (%dose/ hour・min) were calculated. C_{max} and AUC reflect absorption of the labeled substrate.

Statistical analysis

The two way layout analysis of variance (ANOVA) was used to analyze the difference of the paired-data by sex and each time. After that, we calculate the Wilcoxon signed-rank test, to examine the statistical significance of any difference in measurements. All values are expressed as mean standard deviation (SD). A p value less than 0.05 was considered to indicate statistical significance.

Results

Eleven healthy volunteers (5 women and 6 men) participated in this study. The results of ^{13}C-glucose breath tests are shown in Fig. 1. The two way layout ANOVA was revealed the significant difference of the paired-data between baseline and after two weeks administration of *BOT* by sexes. *BOT* significantly decreased glucose oxidation from 20 to 170 min ($p<0.05$) only in women. No characteristic other than sex was associated with a significant difference in measurements.

Glucose, Insulin, serum active GLP-1, FFA, triglyceride (TG), RLP-C concentration were not statistically significant by *BOT* in either sex (Fig.2).

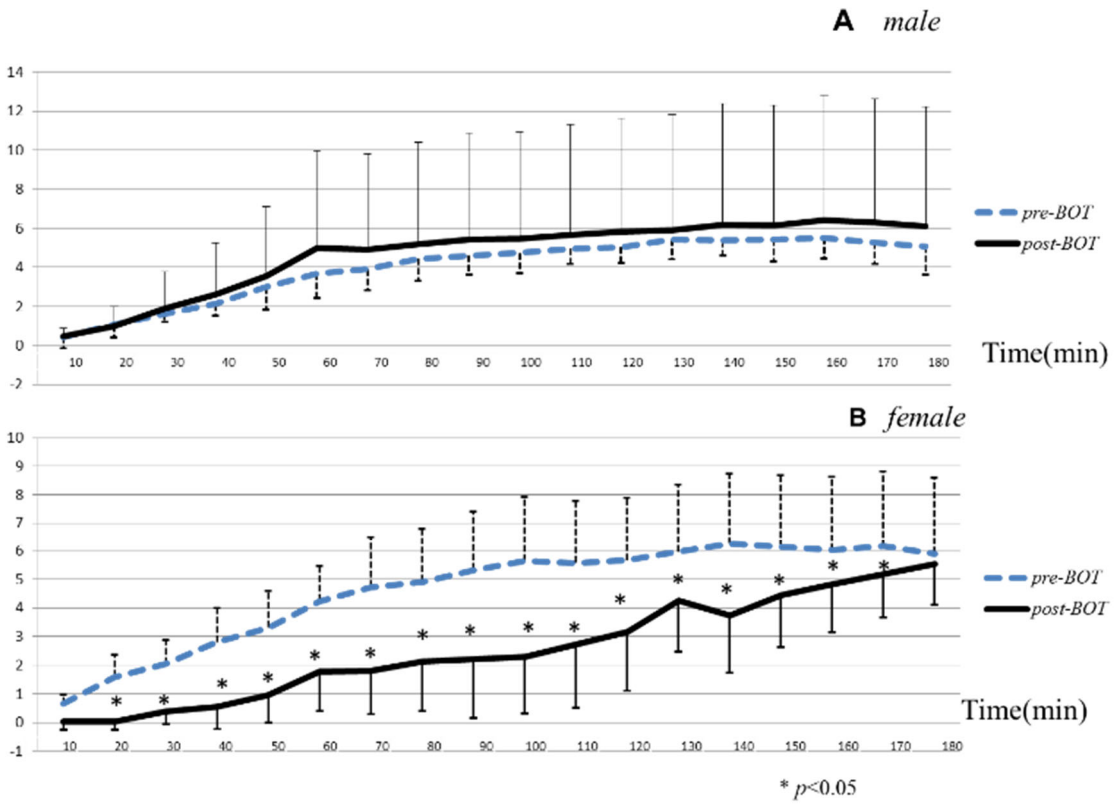


Figure legends

Postprandial ^{13}C-glucose breath test as measured by 13C-glucose oxidation rate (% dose / hour), in male (A) and female (B). Dotted line and solid line indicate pre- and post- *Boiogito* (*BOT*) values, respectively. *BOT* significantly decrease glucose oxidation in female, but not in male from 20 to 170 min ($p<0.05$). Values are mean ± SD.

Discussion

This is the first report to study the effect of herbal medicine, BOT, on postprandial dynamic alternation on energy substrate metabolism. We evaluated glucose oxidation with ^{13}C-glucose breath testing which is non-invasive method. In the present study, two weeks' *BOT* ingestion induced decrease postprandial ^{13}C-glucose oxidation in women. However, postprandial blood glucose, insulin and active GLP-1 concentration was not altered by *BOT* in both men and women.

BOT has been used to treat a number of conditions in obese people for more than two millenniums and traditionally suggested that it improves obesity among women. If *BOT* delays glycolysis without changing total energy expenditure, the body would instead obtain energy by lipid oxidation. Such lipid consumption decreases fat stores, thus reducing obesity, albeit serum TG, FFA and RLP-c level did not significantly change in this trial. This might be considered either by enhanced rates of lipid turnover or reduced glucose absorption by intestine.

Hoo et al. isolated the effective fraction from *Astragali radix*, a principal ingredient of *BOT*, and reported that it alleviates glucose intolerance, insulin resistance and hypertriglyceridemia in *db/db* diabetic mice[4].

It is widely believed that *BOT* is an effective treatment for obesity in middle-aged women, which slows postprandial glucose oxidation rate somewhat observed in the present study. Sex differences in lipid and glucose metabolism has recently been investigated. Lipid oxidation tends to be suppressed lower in female than in male with oral fructose ingestion[7]. Besides, it is known that female has sex-specific mechanism relevant in nutritional change, might be the effect of fibroblast growth factor 21 (FGF 21)[6]. BOT may also share the sex-specific difference in fuel energy metabolism.

Although the present findings were preliminary data, this study suggests that the herbal formulation *BOT* decreased postprandial glucose oxidation rate, which is independent on neither insulin nor GLP-1-incretin pathways, in healthy women. Further studies of patients with metabolic syndrome and diabetes are needed to determine the precise effects of *BOT* on energy metabolisms and substrate oxidation rate.

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Competing Interests Statement

All authors have no competing financial interests to declare.

Contributorship Statement

K.T, H.U, K.N., T.N., K.S., T.H., and Y.U. contributed to the research and reviewed and edited the manuscript. K.T. contributed to the research, data analysis and interpretation, discussion, and writing of the manuscript. H.U. contributed research, data analysis and interpretation , discussion, and writing the manuscript. K.N. contributed research, data analysis and interpretation , discussion, and writing the manuscript. T.N. contributed to the protocol, data generation, discussion and writing the manuscript. K.S contributed to the protocol, data generation, discussion and writing the manuscript. T.H. contributed to the research, data analysis and interpretation, and writing and editing of the manuscript. Y.U. contributed to the research, data analysis and interpretation, and writing and editing of the manuscript. K.T. and H.U. are guarantor of this work, had full access to all the data and takes responsibility for the accuracy of the data and the analysis.

Data sharing statement No additional data are available.

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Clinical Report (Acupuncture)

Two Cases of Low Back Pain / Sciatica Improved by Meridian Therapy

Michihiro Baba
Baba Kaiseido Acupuncture Clinic

I. Preface

Meridian therapy we perform is based on a system where we determine the state of deficiency or excess according to the three bilateral radial pulses and tonify or reduce accordingly and has been established in the 1930th by Sorei Yanagiya and Sodo Okabe. The author has used this method inherited from his predecessors for his acupuncture and moxibustion treatment for approximately 20 years. On this occasion I would like to introduce the treatment we routinely use to treat low back pain. Here I will briefly show some cases and explain the significance of the points we use for our standard therapy.

II. Case

[Case No. 1] 67 years, male, 170 cm, 63 kg

[First visit] Year X, April 14

[Chief complaint] Low back pain

[Present illness]

Five days ago the patient went shellfish gathering and spent a prolonged time with his back bent. On the following day (4 days ago) low back pain developed. After awaking in the morning and rising, bending forward triggered lancinating pain. It was stronger on the right than on the left side. There was no associated leg pain. The patient suffers from low back pain about once a year, but the pain has never been this intense before. He did not visit any medical facilities like an orthopedic clinic.

[Past history]

He is on hypotensive medication. At home blood pressure is stable at an average of 120/70 mmHg.

[Oriental medical diagnosis]

Diagnosis of the three bilateral radial pulses shows a marked deficiency of the kidney channel and excess of the gallbladder channel. Otherwise a mild degree of liver deficiency and stomach channel excess was observed.

[Treatment plan]

Based on the principles for reinforcement and reduction of deficiency and excess, deficiency of the kidney channel was tonified and excess of the gallbladder channel was reduced.

[Treatment]

Tonifying with single short needle insertions at KI7, KI10, LR8, BL23. Reduction at GB31, ST37, BL19 and BL21. Moxa with paper mats were used for the moxibustion, applying 5 half-rice grain sized cones each at BL23, KI7, LR8 and GB31.

[Course]

Upon his visit for the second treatment session (April 17) the lancinating pain had subsided. Since the pulse revealed that the kidney deficiency and gallbladder excess still remained, we administered the same treatment as before.

During the patient's visit for the third treatment session (April 20) the patient reported almost no pain and intended to go and play golf the following week. The gallbladder pulse had significantly improved.

During the visit for the fifth treatment session (May 10) the patient reported having been able to play golf the other day and apart from some tension had no low back pain. The pulse diagnosis revealed only a slightly concerning degree of kidney deficiency.

On July 28 of the same year he visited our clinic because of a common cold and reported being free of low back pain.

[Discussion]

Pulse diagnosis revealed for this patient a kidney channel deficiency and a gallbladder channel excess, so that we chose a standard set of acupoints for the treatment, which then led to a recession of the symptoms. If low back pain is the chief complaint, recovery of the kidney channel deficiency and a gallbladder channel excess revealed by the pulse diagnosis represents one indicator. Further, in cases

of severe pain the left guan (bar) pulse tends to show an excess pattern. In this cases present basically as a kidney deficiency pattern, making it highly possible that insufficient tonification of the kidney channel results in recurrent attacks of low back pain. The present case was considered to be such a typical example.

[Case No. 2] 78 years, male, 159 cm, 50 kg
[First visit] Year X, July 4
[Chief complaint] Pain from the right buttock to the right knee
[Present illness]
The patient took a leave of absence from work (butcher) approximately 10 days earlier because of severe lancinating pain occurring when he puts his right foot down during walking and standing. He consulted two different orthopedists and was diagnosed with a herniated intervertebral disk at L2-3 and received nerve block injections, but these were not effective. He was told to have an MRI examination on the following day. The physician administered several nerve block injections, but since they were not effective, the patient was told to consider surgery. The patient also used analgesics, but they too were not effective and only aggravated his constipation, so that he did not want to use them.
[Past History] On steroids because of kidney disease (nephrotic syndrome).
[Oriental medical diagnosis]
Diagnosis of the three bilateral radial pulses shows a marked deficiency of the kidney channel, excess of the gallbladder, stomach and lung channels. The pulse was overall floating and slightly rapid.
[Treatment plan]
Based on the principles for reinforcement and reduction of deficiency and excess, treatment concentrated on tonification of the kidney channel, while reducing the gallbladder, stomach and lung channels.
[Treatment]
Tonification at KI7, KI10 and BL23. Reduction at GB31, ST37, LU6, BL21, BL19 and BL13. Moxibustion at BL23, KI7, GB31 and LU6, applying 5 cones each (10 cones only at KI6).
Course: Second session (July 8), no change.
Third session: (July 10) too no change.
Walking had become slightly easier after the treatment of the fourth session (July 12). Four days later another nerve block injection was scheduled, but the patient now had doubts about it. He said, he does not want to receive injections because they hurt.
After the fifth session (July 15) the orthopedist said after observing the patient's gait, that the condition had improved sufficiently and there is no need for any further injections. The patient continued to take the analgesics though.
When the patient consulted the physician after the seventh session (July 21) regarding his constipation, the dose of the analgesics was decreased to half the original amount. Walking had become much easier.
After the ninth (July 29) session walking was almost pain free and the patient discontinued the analgesics after consultation with the physician. Since August the patient visited our clinic regularly because of his kidney disease, but the severe pain did not recur and he returned to work.
[Discussion]
When herniated intervertebral disks or spinal canal stenosis is associated with sciatica, it often takes between 1 and 3 months until an alleviation of the pain is achieved. This was the case in this patient too and although until the third session almost no changes were achieved, we continued treatment maintaining the protocol of the first session. This patient required some time to recover from the kidney channel deficiency, but the gallbladder channel excess as a pain indicator actually did improve faster than expected. That was considered to be due to the action of the simultaneously administered analgesics. I have often experienced, that the administration of acupuncture and

moxibustion treatment augments the effects of medications and this patient seemed to have been such a case. In case of low back pain or sciatica a kidney channel deficiency is often the core of the condition, but it is important to identify other simultaneously manifesting excess patterns.

III. Conclusions

The two cases described here are representative for general cases often encountered in my clinic. Pulse patterns that need to be noted for the treatment of low back pain and sciatica are "kidney channel deficiency" and "gallbladder channel excess". Keep in mind, however, that besides those "liver channel deficiency", "stomach channel excess", "large intestine channel excess" and "bladder channel excess" too often appear. The selection of acupoints follows the pulse pattern. Basic points are those shown for the treatment in the case reports above. In addition, KI10, EX-19, LI13 may also be reactive points. Further, attention should also be paid to indurations in the area of the back transport point group from BL23 to BL18 and if present, using these points for the treatment.

Conference Report

Interpretation for Dr. Hempen in Kanazawa and our Activities in JTAMS

JTAMS International Department Translation Team

The 45th Annual Meeting of the Japanese Association of Acupuncture and Moxibustion Society (in Kanazawa) was held in October last year, In the sponsored seminar (by Goto College), we welcomed Professor Moritz Hempen, an internal medicine specialist at the Technical University of Munich, Germany with the theme of Cardiovascular and Traditional Chinese medicine: treatment options of acupuncture and Chinese herbal medicine".

The International Department in JTAMS was pleased to work as an interpreter for that lecture. This initiative this time became a first step for the International Department.

An interpreting team was formed in June by acupuncturists with English language skills in the member of international department. We had repeated meetings and proceeded preparations until the event. First of all, undertaking the preliminary research is important when interpreting. Starting from obtaining background information such as expertise of the lecturer, past career, writing literatures, then, we researched the related literatures on Dr. Hempen's specialized field. The theme this time was "Acupuncture Moxibustion and Treatment By Oriental Treatment Options", Expertize on Western medical diseases and professional medical English are required.

A manuscript from Dr. Hempen was sent to us 3 weeks before the conference and we started translating the manuscript from there. After that, we interacted with Dr. Hempen several times by e-mail, but it was extremely difficult to talk to details of the contents by e-mail alone. To assume every situation and cases, we prepared hand data and entrusted everything to a preliminary meeting on the day of presentation. Dr. Hempen's lecture was given in the form of a consecutive interpreting that interpret each time after Mr. Hempen's explanation.

The meeting just before the lecture was mainly confirmation of the contents, but it took well over 3 hours just for it. The lecture time was 50 minutes, but it was full of uneasiness whether we could finish within the set time while consecutively interpreting. We did not have a time for through practice, so it was exactly the first game of the presentation.

When the lecture started, we proceeded the interpreting while taking notes on the contents which are not listed on the manuscript. The primary concern was whether the presentation will end within the time. It finished in 50 minutes, within the scheduled time, though always checking the time with the timer at hand. Apart from this lecture, we also engaged in attendance at Dr. Hempen during the social gatherings and conference, and we kept on bridging communication with other teachers. And also, the day Dr. Hempen left Japan for Germany, we saw him off at the Haneda Airport. It was the first time for an international department to support this kind of activity but we got compliments from the attendees, which ended up with getting a good start.

Through this experience, we, the International Department, would like to focus more on inbound support in the future. As number of inbound tourists

is expanding towards hosting the Olympic Games in Japan, the demand for acupuncturists with backgrounds other than Japanese language will increase. There is no doubt that Japanese acupuncture and moxibustion has a distinctive merit, and its outstanding skill leads the world.

Many of the teachers who handle it belong to this traditional acupuncture and moxibustion society. However, we feel very sorry that these facts are not so known to the world yet. The fact that many of the researches and studies conducted in Japan are not yet translated into English, results are not widely recognized. We are so concerned about the situation where the treasures are buried within Japan and never be discovered. How unfortunate it is!

We would like to disseminate the art of Japanese acupuncture and moxibustion, including this wonderful techniques and EBM from the studies, from our international department. To the start, what we are now thinking is to first publish the English terminology of the traditional acupuncture moxibustion. Currently, each acupuncture organization has various expressions in unique acupuncture and moxibustion practices. Although it shows the same symptoms and condition, each group has their own phrases. For practitioners from foreign countries, this is extremely difficult to understand. In order to have a better understanding of Japanese traditional acupuncture and moxibustion, we are thinking about creating an Oriental medicine glossary in English that summarizes each expression clearly. Receiving the inbound visitors from all over the world, calls for support their stay have been increasing also in the field of acupuncture.

Patients from foreign countries will increase in clinics in the future. Even though foreign travelers want to receive acupuncture and moxibustion treatment in Japan, they do not know where they can receive treatment or are worried because of the language barrier. There may be many teachers who feel uneasy about making communication to foreign patients. The language barrier is towering up between them. In view of this problem, we are also considering conducting conversation techniques seminars that include role-play practices in the clinic setting in the future.

As an international department of the traditional acupuncture and moxibustion society, we will be a bridge to spread this Japanese traditional acupuncture to the world even a little, and at the same time, we will strive to prepare for receiving inbound visitors from foreign countries.

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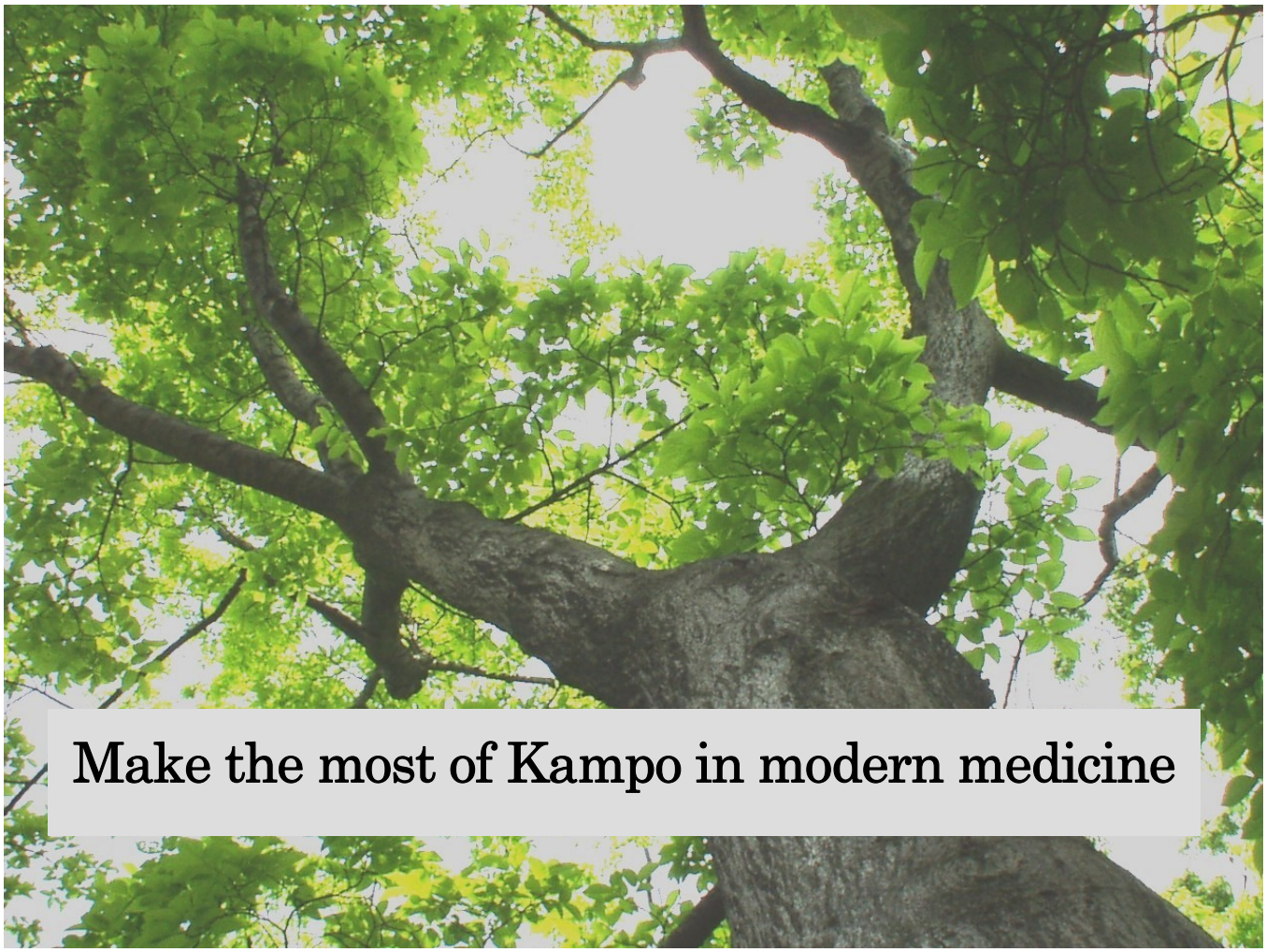

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