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KAIM

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Editorial

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Medical History in Japan

“Historical Significance of the Standardization of Acupoint Locations”, the Second Japanese Acupoint Committee (1)
Makoto Mayanagi

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Makoto Mayanagi

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.

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Editorial

Acupuncture–Moxibustion and Modern Medicine

Acupuncture is a form of medicine that originated from ancient ideologies, philosophies and science 2,000 years ago along the Yellow River valley. Based on the observation of nature, it considers nature and human beings as inseparable and that human beings exist under the influence of nature. It builds on and theorizes the Qi energy, and explains the relationship between the internal organs and the body surface according to meridians and acupuncture points. Furthermore, it recognizes that the mind and body mutually influence each other, and that the relationship between society and human beings is a factor in the development of diseases. These acupuncture theories were born out of the strong influence of ideologies and philosophies of the masters of various schools of thought that emerged over several centuries prior to the birth of acupuncture, during the Spring and Autumn Warring States period.

Modern medicine, on the other hand, emerged in Europe after the 18th century, based on the ideologies, philosophies and science of modern and contemporary Europe. Modern science and physics achieved rapid progress during the 17th to 18th centuries and formed the basic concept that gave rise to modern Western medicine, which in effect negated the religious medicine of Medieval Europe. Modern medicine separated from superstition and magic, and stressed that diseases are not punishment by the gods, but a result of environmental factors, nutrition and lifestyle habits. It also acknowledged the body's spontaneous cure, but greater emphasis was placed on anti-bacteria drugs (chemico-pharmaceutical preparations) and surgical procedures for external injuries as the underpinnings of its significance.

Given the 2,000-year passage of time between the rise of the two forms of medicine, a simple comparison by time period reveals large differences in historical background, ideologies and philosophies between the two.

However, acupuncture, at the time it emerged, eliminated the spiritual influences of medicine that existed up to then, analyzed life and diseases based on an observation of nature from the scientific stance of the times, and addressed phenomena that occur to living organisms as they are. This approach is basically the same as the approach of observing nature from the standpoint of science, and relates to modern medicine, which is based on science.

Additionally, acupuncture's theorization of the inseparable relationship between nature and human beings could be said to correspond to modern life theories.

Furthermore, acupuncture correlated the parts of the body by identifying the relationship between the inside and outside of the human body according to meridians. Although the existence of meridians has yet to be proven, the development of the system that unifies and integrates the entire body could be said to be in common with the nervous system and circulatory system of modern medicine.

Moreover, when considering the fact that acupuncture defined the influence of social relationships on the physical body as a causal factor of diseases and focused on the issue as one of its pillars, it could be said that acupuncture had already recognized, 2000 years ago, the bud of the issue that is addressed by modern mind-body medicine and psychosomatic medicine.

In these ways, acupuncture's fundamental perception of nature and the development of its system share common aspects with modern medicine.

However, because the study of acupuncture was founded on ancient Chinese books of medicine such as "Suwen," "Lingshu" and "Nanjing," it tried to categorize and fit all phenomena into the framework of the Yin and Yang, Five Phase Theory and the Three Yin and Three Yang Theory that were considered outstanding theories at the time. It is thought that this eventually led to a lack of perspective that also embraces the diversity of uncertain elements that are observed in phenomena displayed by nature and the human body.

In thinking about the future of acupuncture, it would be important to contemplate how best to deal with phenomena expressed by the physical body and incorporate that perspective into a new theoretical system while also giving consideration to Modern Medical theories.

Shuichi Katai
Associate Editor of the Journal of KAIM
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Japanese Acupuncture - Current Research

Current Research of Acupuncture for Chronic Prostatitis/Chronic Pelvic Pain Syndrome

Hisashi Honjo

Department of Clinical Acupuncture and Moxibustion,
Meiji University of Integrative Medicine,
Nantan, Japan

Introduction

Currently, several studies of acupuncture for lower urinary tract symptoms including urinary frequency, urinary urgency, urinary incontinence and genito-urinary pain or discomfort have reported. This article reviewed for the acupuncture treatment of chronic prostatitis/chronic pelvic pain syndrome.

Prostatitis is a common disease in urological outpatients with an estimated account of about 2 million visits per year in United States.¹ Community-based studies disclosed that the prevalence of prostatitis-like symptoms ranged from 9.7% to 12% of men.^{2,3} Chronic prostatitis/chronic pelvic pain syndrome is defined as a new category of prostatitis syndrome by the National Institutes of Health established an International Prostatitis Collaborative Network in 1995.⁴ The classification is described as follows:

Category I. Acute bacterial prostatitis

Category II. Chronic bacterial prostatitis

Category III. Chronic prostatitis/chronic pelvic pain syndrome

III A. Inflammatory

III B. Non-inflammatory

Category IV. Asymptomatic inflammatory prostatitis

Chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) is a syndrome with long history (at least 3 months or longer) of genito-urinary and pelvic pain or discomfort, associated with irritative and obstructive voiding symptoms and/or sexual dysfunction, and

accounts for 95% of cases with chronic prostatitis.⁵ Therefore, CP/CPPS is diagnosed by the symptoms following exclusion of urinary tract infection. To assess the symptoms in patients with CP/CPPS a validated and reliable symptom assessment tool in chronic prostatitis has been used worldwide. The tool is the National Institutes of Health Chronic Prostatitis Symptom Index (NIH-CPSI) developed by the NIH Chronic Prostatitis Collaborative Research Network in 1999 (Appendix).⁶

This questionnaire is formed by 3 main headings as the pain or discomfort of symptoms (locations, frequency and severity), the urinary symptoms (irritative and obstructive voiding symptoms) and the impact of these symptoms on the patient's quality of life. Nine separate items could be addressed the important issues of chronic prostatitis. The domain of pain or discomfort is rated on a scale of 0-21. The urinary symptoms are rated on a score of 0-10 while the impact on quality of life is rated on a score of 0-12. Each of these three domains could be assessed independently. To take an instance of clinical study in Japan using Japanese version of the NIH-CPSI, the pain or discomfort domain score was significantly higher in the chronic prostatitis group than in the control group (9.79 vs. 0.72, respectively).⁷ Additionally, a total score of NIH-CPSI that added the three domains and rated 0-43 could be evaluated the responsive measure of the treatment options, including acupuncture treatment.

There are multiple treatment options for CP/CPPS, including conservative therapy, antibiotics, anti-inflammatories, alpha-blockers, phytotherapeutics agents and other medical agents. Conservative therapy for the symptoms of CP/CPPS is mainly several suggestions for the

patients about diet (avoid spicy food, acidic food, alcohol, caffeine), lifestyle (avoid psychological stress and anxiety), activity (avoid long period of sitting and bicycling) and exercise (walking). By the NIH definition, Category III CP/CPPS is non-bacterial prostatitis, the majority of patients with CP/CPPS, however, have been treated by antibiotics.⁸ Approximately 50% of patients with CP/CPPS treated with antibiotics showed improvement of their symptoms. Alpha-blockers which are the most effective medical therapy to lower urinary tract symptoms related to benign prostate hyperplasia (BPH) have been also used for the treatment of CP/CPPS. Recently, combinations of antibiotics and alpha-blockers appeared to achieve the greatest improvement in clinical symptom scores compared with placebo, which reported by a systematic review and meta-analysis.⁹ Anti-inflammatories would be one of the common agents for CP/CPPS as well as phytotherapeutics (Cernitin pollen extract) in Japan. After all, these medical agents are not effective for all patients with CP/CPPS. Additionally, a 50% improvement in symptom score could be considered as an excellent response to the therapy in CP/CPPS.¹⁰

Acupuncture for CP/CPPS

We have performed acupuncture therapy for the patients with CP/CPPS.¹¹ In this study, ten male patients with non-inflammatory chronic pelvic pain syndrome with intrapelvic venous congestion were treated by acupuncture. Eight patients had previously received pharmacotherapy, which was unsuccessful. Acupuncture was performed using disposable stainless needles, which were inserted into the bilateral BL-33 points and rotated manually for 10 minutes. The treatment was repeated every week for 5 weeks without other therapeutic maneuvers. Transrectal

ultrasonography (TRUS) in conveniently screening intrapelvic venous congestion and magnetic resonance venography (MR venography) as well as clinical symptoms using the NIH chronic prostatitis symptom index (NIH-CPSI) and the international prostate symptom score (IPSS) were compared before and after the treatment. In the results, pain and QOL scores of the NIH-CPSI 1 week after the 5th acupuncture decreased significantly ($p < 0.05$ and <0.01 , respectively), compared with the baseline in all patients. The maximum width of the sonolucent zone 1 week after the 5th treatment also decreased significantly ($p < 0.01$, compared with the baseline, Figure 1 and Figure 2). Intrapelvic venous congestion demonstrated by MR venography was significantly improved in 4 patients.

Thus, we believe that acupuncture treatment is effective for the symptoms of CP/CPPS. Furthermore, other researcher reported the same kind of results in the similar therapeutic methods as our study.¹² In the study ninety-seven CP/CPPS patients received six sessions of acupuncture to the BL-33 acupoints once a week. Each patient compared NIH-CPSI before and after the treatment and on 12th and 24th weeks following the treatment. As the results, there was a statistically significant decrease in all of the subscores evaluated at all periods compared with the baseline. Eighty-six patients out of 93 (92.47%) were NIH-CPSI responders (more than 50% decrease in total NIH-CPSI score from baseline) at the end of the treatment. These results suggest that acupuncture appears to be a safe and potentially effective treatment in improving the symptoms and quality of life of men clinically diagnosed with CP/CPPS.

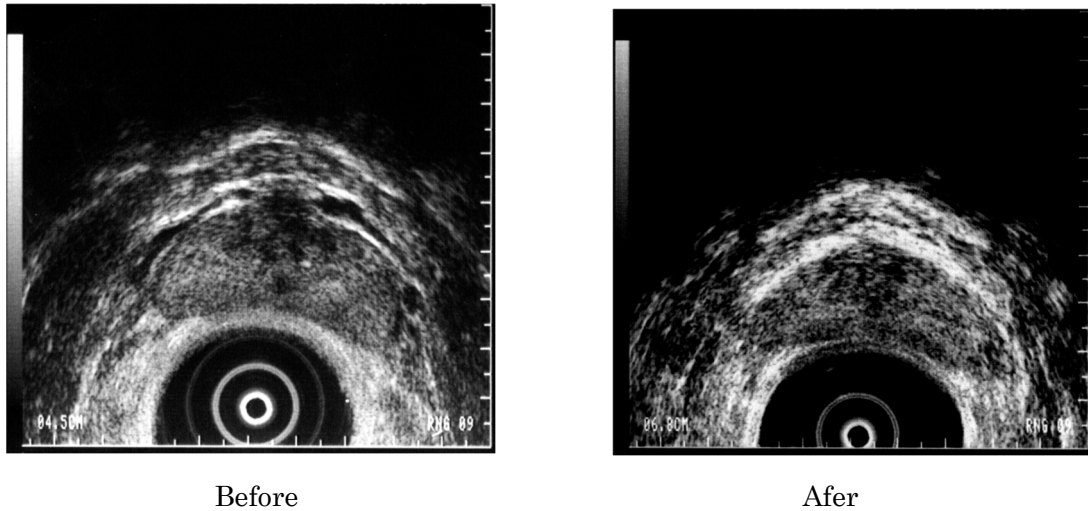


Figure 1 (Modified by Int J Urol, 11:607, 2004.)

Figure 1 Changes in the findings of intrapelvic venous congestion by transrectal ultrasonography before and after acupuncture

Transrectal sonograms of the prostate show the changes in a patient before and after acupuncture. The arrows show the dilation of the sonolucent zone. The maximum width of the sonolucent zone is 4.5 mm before and 1.3 mm after acupuncture.

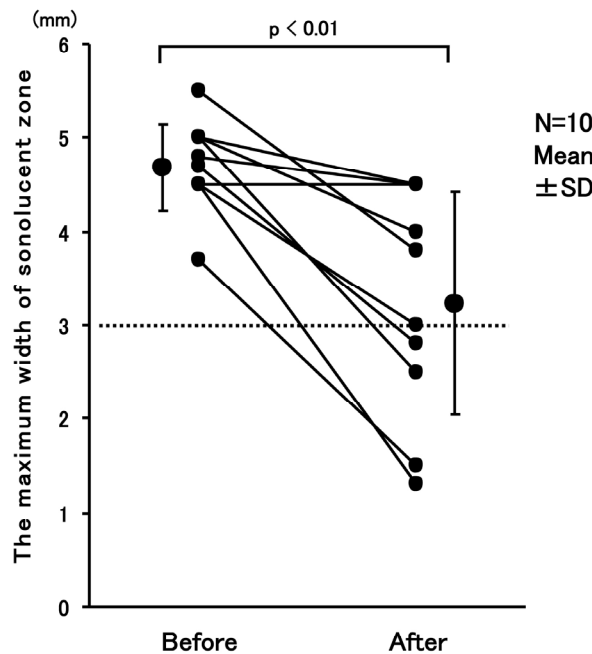


Fig. 2 (Modified by Int J Urol, 11:607, 2004.)

Figure 2 Changes in the maximum width of the sonolucent zone by transrectal ultrasonography before and after acupuncture

Conclusion

This article reveals the therapeutic effects of acupuncture for non-inflammatory chronic pelvic pain syndrome. However, long-term effects still remains unknown. Further studies are needed, therefore, to clarify the effects of acupuncture treatment for non-inflammatory chronic pelvic pain syndrome in a larger number of patients in a randomized, placebo controlled trial.

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Kampo Medicine - Current Research

*Three Cases of Severe Bradyarrhythmia in Elderly
Dementia Patient Successfully Treated with Goreisan
(Powder of Five Ingredients with Poria) Extract
Formulation for Prescription*

Kazunari Ozaki¹⁾²⁾, MD, Mitsuru Kageyama³⁾⁴⁾,
MD, PhD, Hiromi Rakuga²⁾, MD, PhD

1) Department of Clinical Gene Therapy, Osaka
University Graduate School of Medicine,
Suita, Osaka, Japan

2) Department of Geriatric Medicine and Nephrology,
Osaka University Graduate School of Medicine,
Suita, Osaka, Japan

3) Kageyama Clinic, Sakai, Osaka, Japan

4) Department of Obstetrics and Gynecology,
Osaka City University Graduate School of Medicine,
Osaka, Japan

Key words:

bradyarrhythmia, bradycardia

Goreisan (五苓散, Wu-Ling-San, or Powder of Five
Ingredients with Poria)

Kampo (漢方, the medicine traditionally practiced in
Japan, based on ancient Chinese medicine)

Kampo extract formulation for prescription

sick sinus syndrome (SSS)

sui-doku (水毒, disorders of the body's fluid metabolism)

Abstract

Introduction: Sick sinus syndrome (SSS), or sinus node dysfunction (SND), is a heterogeneous clinical syndrome of various etiologies, such as sinus bradyarrhythmia, sinus arrest, and sinoatrial (SA) block, with periods of bradyarrhythmia. In this paper we would like to describe three patients with elderly dementia who had severe bradyarrhythmia, and who have shown remarkable improvements with *Goreisan* (Powder of Five Ingredients with Poria, or *Wu-Ling-San*), which is a *Kampo* (traditional Japanese medicine) formula for *sui-doku* (disorders of the body's fluid metabolism).

Case reports: All three patients had dementia, bradycardia and *sui-doku* (disorders of the body's fluid metabolism). Two of the patients had severe bradycardia with minimum pulse rate of less than 40 beats/min (bpm). All patients were treated with *Goreisan* extract formulation for prescription for *sui-doku*. All patients started recovering from bradycardia within a few days from the beginning of the treatment. Severe bradycardia associated with latent SSS (case 1), severe bradycardia associated with drug-induced bradycardia with SSS (case 2) and moderate bradycardia with infectious diarrhea (case 3) were controlled successfully with *Goreisan*.

Discussion: There is little literature for treatment of SSS with *Kampo* formulation. For treatment of bradyarrhythmia and/or slow-pulse in *Kampo* formulation, on the other hand, some doctors take it for symptoms for cold and use drugs with Processed Aconitine Root (Processi Aconiti Tuber) or with Processed Ginger (Zingiberis Rhizoma). Ebe, et al. reported that *Keishi* (Cinnamomi Ramulus, or Cinnamon Twig, *Gui-Zhi*) and *Keihi* (Cinnamomi Cortex, Cassia Bark, *Gui-Pi* (*Rou-Gui*)) increase heart rate in his book: *Keihou-Igaku* (Theoretical Explanations and Assemblage of Prescriptions of "Cold Damage" and "Golden Chamber"). *Goreisan* contains Cinnamon which can increase pulse rate.

Conclusions: This report suggests the possibility of using *Kampo* medicine for the treatment of severe bradyarrhythmia including SSS in elderly dementia patients. Our data and some reports suggest that *Goreisan* may be useful not only for the management of dizziness, edema, vomiting and diarrhea, but also for that of severe bradyarrhythmia in aged dementia. Further accumulation of the similar cases might be helpful for us to interpret the mechanism of rate control with *Goreisan* in future.

Background: The sick sinus syndrome (SSS), or sinus node dysfunction (SND), is a combination of symptoms (dizziness, fatigue, syncope, pre-syncope, and palpitations) caused by sino-atrial (SA) node dysfunction and manifested by severe sinus bradyarrhythmia, SA block, or sinus arrest (i). Although the term SSS has been popular since the definition by Rubenstein (ii), the more comprehensive title SND is gaining prevalent. In this paper we would like to use the term SSS instead of SND. SSS is quite common, and its incidence increases with advancing age (iii). Symptomatic SSS patients are treated with implantable pacemakers. The degree of bradyarrhythmia at which to consider pacing is generally accepted to be “a rate of less than 40 beats/min (bpm) during waking hours” (iv). In SSS without absolute indications for pacemaker implantation, drug therapy approaches, occasionally, have been temporarily introduced (v).

On the other hand, there is no evidence-based guideline for treatment of SSS with *Kampo* formulation.

We report a patient suffering from severe bradyarrhythmia treated effectively with *Goreisan* (Powder of Five Ingredients with Poria, or Wu-Ling-San) extract formulation for prescription.

Case Reports:

Case one: 82-year-old female.

[Chief complaint:] Dizziness.

[History:] The patient and her family consulted a local clinic due to dementia, just after death of her daughter, in the spring of 200X. Her family rejected nursing by themselves, so they consulted H hospital and admitted its old people’s home (elder care facility: H-home) on June 15. On the second post-admission day, she had dizziness, vomit, and loose stools, therefore the nurse at H-home brought her to our department on June 18.

[Past history:] Hypertension, latent SSS (the family said, “A series of alphabet ‘S’ or something like that.”)

[Western medical findings:] Height of 153cm. Weight of 54.5kg. Body temperature (BT) of 36.2°C. Blood pressure (BP) of 169/95 mmHg. Pulse rate (PR) of 38bpm (regular). Conscious level was clear: GCS15 (E4,V5,M6). Dementia-level was observed with MMSE (Mini-mental State Examination) scores, which were 19points.

Results of physical examination were normal except that the bowel sounds were slightly hyperactive. Schellong’s test (head-up tilting test) was within normal limits (W.N.L.).

Blood chemistry findings were all within normal limits except the one-hour postprandial blood glucose was 111mg/dL. Thyroid function tests and CK-MB was within normal limit.

Electrocardiogram (ECG) marked sinus bradyarrhythmia at a heart rate of 38bpm, left axis deviation, inverted T-wave in V4-5, and minor ST-segment depressions in V6.

Chest X-ray films, computed tomographic (CT) scan of the brain and the neck: W.N.L. for her age, although there was mild brain atrophy in the subcortex.

Ultrasound study of the neck and the heart: W.N.L. for her age.

[*Kampo* findings:] On general diagnosis: Thirsty. Little urine. Pulse diagnosis: Superficial and slow. Tongue diagnosis: Light-red tongue with teeth indentation. Also, slightly dry, thin and white fur. Abdominal diagnosis: Slightly weak abdominal strength. Sound of fluctuating liquid.

Level of *sui-doku* (disorders of the body’s fluid metabolism) : At least 32points with water retention scores (vi) (Table 1).

[Progress notes (Figure 1)]: Because of ECG findings, she should be admitted to another hospital with the cardiac care unit for arrhythmia monitoring, but the family selected palliative treatment. The patient did not meet the diagnostic criteria of orthostatic hypotension (vii). From physical examinations and roentgenological studies, there were little possibility of *orthopedic, oto* rhino-laryngologic, and neurosurgic

diseases. An ECG was characteristic of SSS (Rubenstein type D). The presumative diagnosis, therefore, was dizziness due to severe bradyarrhythmia.

Initially, atropine (0.5mg, intramuscularly) was given. However, the patient reported thirsty without pulse rate improvement. We did not continue injection of atropine enough to block parasympathetic nerve.

Her condition was diagnosed as *sui-doku* (disorders of the body's fluid metabolism) from *Kampo* findings. *Goreisan* (6g / day, b.i.d., Kracie Pharmaceutical, Ltd. (KB-17) was introduced orally. The dizziness and bradycardia improved within 30 minutes. Before administration of *Goreisan*, although, minimum heart rate was 30bpm at night and 38bpm at daytime, after administration of *Goreisan* the minimum heart rate was about 55bpm at daytime for five month. The patient says, "This medicine (*Goreisan*) is very tasty and I always feels good by taking this medicine."

Table 1: Diagnostic score of water retention

Body feels heavy	3	Nausea, Vomitting	3
Pulsating headache	4	Increased gurgling	3
Dull headache	3	Morning stiffness	7
Getting motion sickness easily	5	Tendency toward edema, gastric clapotage	15
Lightheadedness, dizziness	5	Pleural effusion, cardiac water retention, ascites	15
Syncope	5	Epiumbilical palpaition ¹⁾	5
Watery nasal discharge	3	Watery diarrhea	5
Hypersianosis	3	Decrease urinary volume	7
Foamy sputum	4	Diuresis	5

Diagnostic criteria: A score of more than 13 points indicates water retention.

Note 1: Epiumbilical palpaition refers to an increased pulsation of the abdominal aorta that is felt during light massage of the umbilical area.

Cf.: *The Journal of Kampo, Acupuncture and Integrative Medicine* 2005;1Special Edition:12

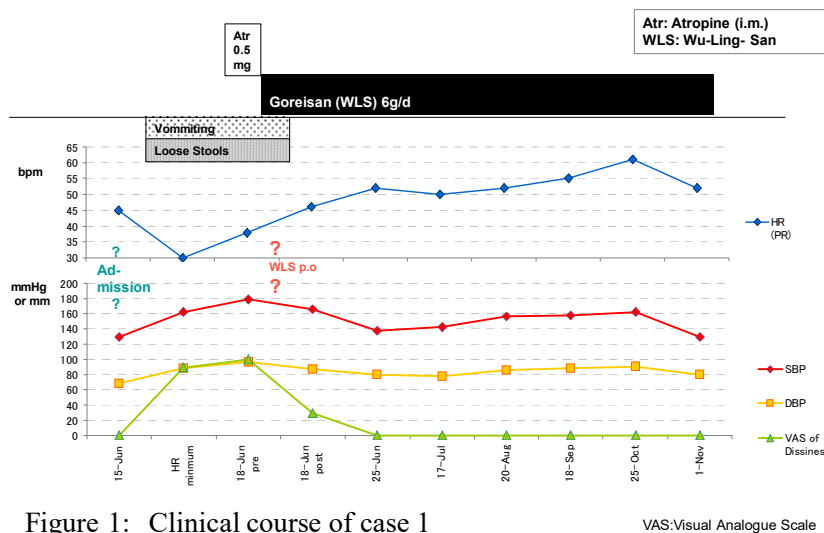


Figure 1: Clinical course of case 1
Change in BP, HR(PR),and VAS of dizziness measured before and after *Goreisan* administration

Case two: 87-year-old female.

[Chief complaints:] Loose stools, leg edema, excessive daytime somnolence, respiratory failure.

[Past History:] Cerebral infarction (76 y.o. in 1997), epilepsy (with carbamazepine 600mg/day t.i.d.), several contusions and fractures, behavioral and psychological symptoms of dementia (BPSD, in 2005)

[Present History:] The patient and her family consulted S-clinic and she admitted its old people's home (S-home) in September, 2005. On October 5, 2008, she had a cold and this preceded the onset of pneumonia (Pn).

The use of antibiotics (CTM, 2g/day, d.i.v.) and oxygen (Ox) therapy for four days showed good effectiveness for treatment of Pn, so antibiotics was switched from CTM to CEPN-PI (300mg/day, p.o.) and Ox therapy tapered off. On Oct.14, loose stools, leg edema and sleep disorders were shown, so she and the nurse consulted S-clinic and we made a house-call on the next day.

[Western medical findings:] Height of 151cm. Weight of 41.6kg. BT of 36.6°C, BP of 114 / 68 mmHg with a PR of 36bpm (regular). Conscious level was GCS10 (E3,V3,M4). Her dementia-level was 15points with MMSE. SpO2 : 98% (O₂ 3 l/min), Moist rale (coarse crackles) was heard at the right upper lung field. Her legs were slightly edematous.

Laboratory data on admission are shown in Figure 2.

An ECG performed in a comatose state (Oct.23) revealed episodes of severe bradyarrhythmia at a rate of 20bpm. A 12-lead ECG tracing on the next day showed episodes of sinus bradyarrhythmia with minimum heart rates of 37bpm.

[Kampo findings:] On general diagnosis: Thirst, sweat and little urine. Pulse diagnosis: Superficial and slow. Sometimes knotted pulse. Tongue diagnosis: Unknown. The patient rejected to open her mouth. Abdominal diagnosis by palpation: Slightly weak abdominal strength, sound of fluctuating liquid, epigastric discomfort slightly.

Level of *sui-doku* : At least 26points.

[Progress notes (Figure 2):] Although the family hoped palliative care at S-home, her condition was bad enough to be referred to the other hospital for immediate admission. As her condition was diagnosed as *sui-doku*, *Goreisan* (6g / day, b.i.d; KB-17) was introduced orally. CTM was reintroduced. Tulobuterol-tape 2mg/day and aspirin 100mg/day were continued and the other drugs (carbamazepine 600mg/day etc.) were discontinued. Within two days, her loose stools, leg edema, severe bradyarrhythmia, conscious level, and respiratory failure improved. Four days later, she did not need antibiotics (CTM) and oxygen therapy. Seven days later (Oct.22), her laboratory findings such as CRP were improved, and the drugs (carbamazepine etc.) were reintroduced and *Goreisan* was discontinued. Within one day, her

bradycardia developed with decreased level of consciousness. Therefore, we changed the prescriptions as of Oct.15 immediately (*Goreisan*, tulobuterol-tape, and aspirin were reintroduced and carbamazepine was discontinued). On the next day, her status improved again. She had had no trouble with heart rate of 55 bpm until November 12, and subsequently the *Goreisan* was tapered off.

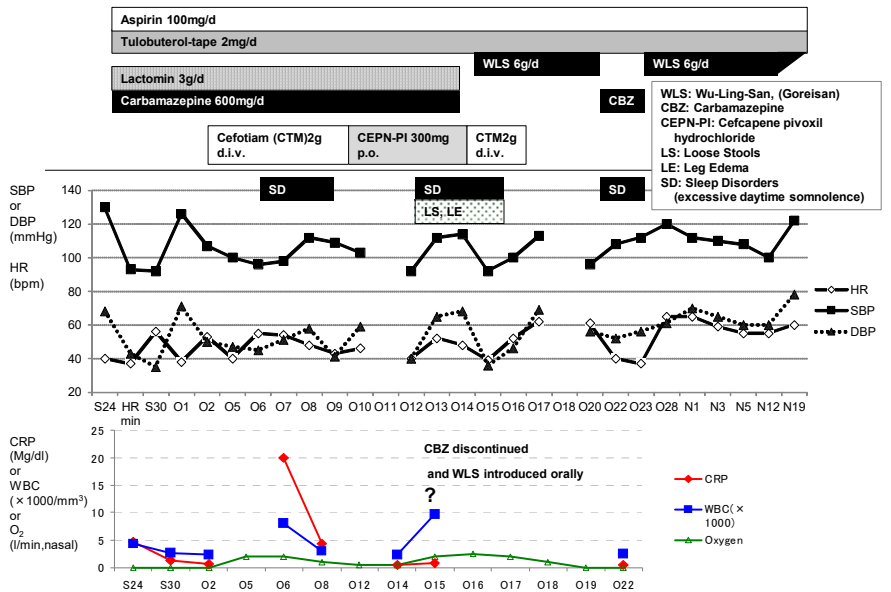


Figure 2: Clinical course of case 2
 : (Top), Change in BP and HR(PR) measured before and after *Gorei*-san administration.
 : (Bottom), Change in CRP, WBC, and Oxygen.

Case three: The third case was a 72-year-old female.

[Chief complaints:] Watery diarrhea, vomiting.

[Past History:] Cerebral infarction.

[Present History:] The patient and her family consulted S-clinic and she entered its old people's home in October, 2001. On February 21, 2008, she noted the onset of nausea and vomiting. And for the following several days she had had recurrent watery diarrhea, which remained unresponsive despite lactomin and domperidone, accompanied by vomiting and sweating.

[Western medical findings:] Height :145cm, Weight ; 54kg, BT; 37.3°C, BP; 127/ 71 mmHg, PR; 48bpm (regular). Conscious level; clear. Dementia-level; 16points (MMSE). There were no resistance and no tenderness, but the bowel sounds are hyperactive.

ECG findings: Sinus bradycardia, abnormal Q waves in III and aVF.

[Kampo findings:] On general diagnosis: thirst, sweat, little urine, slight cold sensitivity. Pulse diagnosis: Superficial and slowed-down (Huan). Tongue diagnosis: Dark-red tongue with teeth indentation, slightly dry, thin and white fur. Abdominal diagnosis: Slightly weak abdominal strength, sound of fluctuating liquid.

Level of *sui-doku*: At least 33points.

[Progress notes:] Examination disclosed infectious diarrhea due to norovirus-related gastroenteritis. Her condition was diagnosed as *sui-doku*. On February 25, *Goreisan* (6g / day, b.i.d; KB-17) were introduced orally for *sui-doku*. By the next day, abdominal symptoms subsided and besides her moderate bradyarrhythmia improved. She had had no trouble with heart rate of 50-60 bpm until March 4, when *Goreisan* were discontinued. Since then, the heart rate has been decreased gradually to 45-50bpm.

Summary of three cases: All three patients had dementia, bradycardia and *sui-doku*. Two of the patients had severe bradycardia with minimum PR of less than 40 bpm. All patients were treated with *Goreisan* for *sui-doku*. Severe bradycardia associated with SSS (case 1), severe bradycardia associated with drug-induced bradycardia with SSS (case 2) and moderate bradycardia with infectious diarrhea (case 3) were controlled successfully with *Goreisan* (Table 2). All patients started recovering from bradycardia within a few days from the start of the treatment without any adverse reaction.

Discussion

Standard treatment of bradyarrhythmias including SSS: The indications for pacemaker implantation

in patients with SSS are listed in the ACC/AHA/NASPE 2002 guideline (viii). Due to limitations of space, a detailed discussion on the indications for pacemaker implantation is not possible here. Please refer the guideline for more information.

In SSS without absolute indications for pacemaker implantation, drug therapy, occasionally, have been temporarily introduced (ix). Drug treatment of sinus bradyarrhythmia is usually not indicated for asymptomatic patients. While intravenous atropine has aided some patients transiently, most patients ultimately require placement of a pacemaker. Although in the past, isoproterenol was used quite commonly in patients with bradyarrhythmia, further appreciation of its substantial risks of the increase in myocardial oxygen demand has diminished its role. Some physicians use theophylline or cilostazol for bradyarrhythmia, though these are drugs of off-label use under health insurance in Japan. In patients with sinus bradyarrhythmia secondary to therapeutic use of digitalis, beta-blockers, carbamazepine or calcium channel blockers, simple discontinuation of the drug are often all that is necessary.

Table 2: Baseline characteristics of three patients

No.	case1	case2	case3
Age, Gender	82, Female	87, Female	72, Female
Diseases other than bradycardia	Dementia(AD), HT	Dementia+Brain infarction, knee-OA, Asthma	Dementia+Brain infarction, Fx at Lumbar discs, HT
Level of the Dementia	MMSE 19/30 HDS-R 18/30	MMSE 15/30 HDS-R 16/30	MMSE 16/30 HDS-R 16/30
(Active) Symptoms	Dizziness, Thirst, Oliguria	Loose stools, slight leg edema and sleep disorders	Diarrhea (norovirus-related gastroenteritis)
ADL (Barthel Index)	95/100 ? 100/100	0/100 ? 45/100	20/100 ? 55/100
Water Retention Score (Terasawa)	32/100	At least 26/100	At least 33/100
WLS(Gorei-san)	6g/day b.i.d.	6g/day b.i.d.	6g/day b.i.d.
ECG	Sinus bradyarrhythmia at a heart rate of 38bpm. Rubenstein type I.	Sinus bradyarrhythmia with minimum heart rates of 37bpm.	Sinus bradyarrhythmia at a heart rate of 38bpm.
Change in HR(PR) HR(PR) of pre-administration ? HR(PR) of post-administration	30bpm at night, 38bpm at daytime ? about 55bpm at daytime	20bpm at night(with CBZ), 37bpm at daytime ? about 55 bpm at daytime	48 bpm ? 50-60 bpm (with WLS) ? 45-50 bpm (without WLS)

Abbreviations:

MMSE, Mini-Mental State Examination; HDS-R, Hasegawa Dementia Scale-Revised ; AD, Alzheimer's disease. HT, Hypertension; ADL;Activities of Daily Living, WLS;Wu-Ling-San, or *Goreisan* (Kracie Pharmaceutical, Ltd., (KB-17)), OA; Osteoarthritis, DM; diabetes mellitus, Fx;fracture

Treatment of bradyarrhythmias including SSS with *Kampo* formulation: On the other hand, there is little literature for treatment of SSS with *Kampo* formulation. For treatment of bradyarrhythmia and/or slow-pulse with *Kampo* formulation, on the other hand, some doctors take these symptoms for *kan-sho* (cold pattern) and use drugs with *bushi* (Aconiti Later Radix, Processed Aconitine accessory root, or *Fu-Zi*) or with *kankyo* (Zingiberis Rhizoma, Dried Ginger Rhizome, or *Gan-Jiang*) (x). Some Japanese doctors have used *Kampo* drugs for treatment of bradyarrhythmia and/or slow-pulse as Table 3 shows.

Table 3 : Cases with *Kampo* formula for bradycardia

Author	Literature	Organisation	Cardiac diseases	Age Sex	Pulse Diagnosis	HR change	<i>Kampo</i> formula
Tauchi N. et al.	The Japan Pediatric society for Oriental Medicine 2003 Vol.19 pp.5-12	Dept. of Pediatric Cardiology and NICU, Ogaki Municipal Hospital, Japan	Advanced atrioventricular (AV) block(2:1)	5y.o. male	Not commented	63bpm ? improvement of AV block (HR: unknown)	Ling-Gui-Zhu-Gan- Tang (Extract Granules) 2.0g/day t.i.d. (Pharmaceutical Manufacturers unknown)
Watanabe Y.	<i>Kampo-no-Rinsho</i> , 46(5)(1999)	Watanabe OB/OG, Fujieda-city, Japan	Left Ventricular Hypertrophy (LVH), extrasystolic arrhythmia, Mitral Stenosis (MS) susp.	66y.o. female	Deep and Slow ? Big and Slowed Down	45bpm ? 59bpm	Ren-Shen-Tang (Extract Granules) 4.0g/day(OHSUGI PHARMACEUTICAL Co.,LTD.), Da-Jian-Zhong-Tang (Extract Granules) 5.0g/day(Tsumura & Co.)
Sakamoto T.	<i>Kampo-kenkyu</i> No.444, pp.3 68-369 (2008)	Sakamoto Clinic, Hirosaki-city, Aomori, Japan	Unknown Origin	88y.o. female	Deep, Weak, Fine, and Slow ? Not commented	30bpm ? 70bpm	San-Huang-Xie-Xin-Tang (Extract Capsules) 6g/day t.i.d (for 2 weeks) (Kotaro <i>Kampo</i> Pharmaceutical Co., Ltd.)

How dose they describe *Goreisan* in classics: *Goreisan* comes from the “*Shan-Han-Lun* (On Cold Damage)” and “*Jin-Kui-Yao-Lue* (Synopsis of Golden Chamber)”, which classical textbooks written by Zhang-Zhong-Jing during the Latter (East) Hun era. The “*Shan-Han-Lun*” says, “When in Greater-Yang disease, after sweating is promoted and great sweat issues, if there is dryness in the stomach, vexation and agitation with insomnia, and a desire to drink water, giving a small amount of water will harmonize the stomach-Qi so that recovery will lead to ensue. If the pulse is floating and there is

inhibited urination, slight heat, and dispersion-thirst. *Goreisan* governs. (xi)”And the “*Jin-Kui-Yao-Lue*” says “When a thin person presents with palpitation below the umbilicus, drooling and foaming at the mouth, withdrawal, and dizziness, this indicates water. *Goreisan* governs. (xii)” Indications for *Goreisan* is acute and chronic diseases due to *sui-doku*, such as headache, severe thirst with vomiting after drinking, urinary difficulty, edema, general fatigue, diarrhea, fluctuating liquid in the epigastric region, vomiting frothy saliva, and vertigo.

Medicinal Constituents of *Goreisan*:

Goreisan is not a simple preparation of medicine, but contains multiple herbal medicines such as

- (1) *Bukuryo* (茯苓, Poria, Hoelen, or *Fu-Ling*) 3g :For drain dampness and tonify spleen Qi.
- (2) *Chorei* (猪苓, Polyporus, polyporus, or *Zhu-Ling*) 3g. For eliminate dampness and promote urination.
- (3) *Byakujutu* (白朮, Atractylodis Macrocephalae Rhizoma, White Atractylodes Rhizome, or *Bai-Zhu*) 3g: For tonify spleen-Qi and promotes transformation and transportation of the spleen-Qi.

- (4) *Takusha* (沢瀉, Alismatis Rhizoma, Water Plantain Rhizome, or *Ze-Xie*) 5g: For drains dampness and promotes urination.
- (5) *Keishi* (桂枝, Cinnamomi Ramulus, Cinnamon Twig, or *Gui-Zhi*) and *Keihi* (桂皮, Cinnamomi Cortex, Cassia Bark, or *Gui-Pi* (*Rou-Gui*)) 2g: For warm vitality gate and tonify yang.

The presumable reasons for successful treatment for this case of bradyarrhythmia with *Goreisan* were:

1: Cardiologically, *Goreisan*, which is *diuretics* for eliminating dampness, made an improvement of the extravascular volume overload. This improvement in the extravascular volume overload led to an improvement of bradyarrhythmia.

2: From the pharmacologic point of view, withdrawal and discontinuation of the medicine that induces bradyarrhythmia can contribute to improvement of bradyarrhythmia. In second case, discontinuation of carbamazepine can be effective for improvement of bradyarrhythmia. serum half-life

From *Keihou-Igaku* point of view, *Keishi* moves the Qi from Stomach and increases amount of Qi to outside-tract and this leads to increase of heart rate. According to Ebe, et al.^(xiii), the Qi runs from Stomach to outside-tract through Epigastric region (*Xin-Xia*), Chest, Lung and Pericardium (*Xin-Bao*: connecting channel of the envelope of the Heart). If the Qi from Lung to Pericardium is difficult to be dispersed (*sen-san*), the amount of Qi to Pericardium decreases, this leads to “slow-pulse”. According to “*Keihou-Igaku* (six-channel pattern indication)”, the factor which decides pulse rate is the amount of Lung-Qi, which runs from Lung to Pericardium. *Goreisan* contains *Gui-Zhi* which can increase pulse rate. *Gui-Zhi* moves the Qi and increases amount of Qi, from Stomach to Pericardium and this makes the pulse increased.

3: From a viewpoint of traditional Chinese medicine (TCM), *Goreisan* contains *Gui-Zhi*, which is an acrid, warm medicinal which enters and warms the channels and network vessels, dissipates cold and moves the Qi and blood ^(xiv). Furthermore, *Gui-Zhi* warms the yang specifically of the Heart, Spleen, and Kidneys. If Qi is plentiful, then Yang is warm and energetic enough. If Qi is weak and empty, Yang is lacking and the systemic body and extremities become cold. If Heart-Qi and/or Heart-Yang are weak and empty, the pulse rates become slow and sometimes irregular, and also Blood and Qi are not circulated throughout the whole body. *Gui-Zhi*, which is contained in *Gorei-san*, moves the Qi and

increases amount of Qi and this leads to increase of heart rate.

In Japan, although, some researches on *Kampo* formulation have been carried out from the viewpoint of the *Koho-ha* School (the classical school), they use *Keishito*-group (Ramulus Cinnamoni Decoction group) for treatment of reversed-Qi (*Ki-gyaku* or rising of Qi), which is manifested by so-called hot flush. There are two types of hot flush as follows ^(xv): Active-type hot flush that observed when individuals feel nervous, disappearing when the stress is removed. And fixed-type hot flush is always observed, increasing in the face due to tension as well as blood engorgement. The patients with active-type reversed-Qi normally experience “palpitation” or “tachycardia”.

At first glance, the usage of *Keishito*-group for treatment of reversed-Qi, which usually contains palpitation or tachycardia, seems to be inconsistent with that of *Gui-Zhi* for treatment of bradyarrhythmia or for augmentation of Qi. Where this contradiction comes from?

One possible reason for this contradiction comes from our intention to discuss has not been on *Ketsu* (Blood) and *Sui* (all bodily fluids other than *Ketsu*) but on *Ki* (Qi) in this argument. Now, we must think of *Ki* (Qi), *Ketsu*, and *Sui*, because a balance of these three concepts is, like three wheels in tricycle, indispensable in order to take full advantage of the bradyarrhythmia-relieving aspect of the treatment. If the increase in pulse rate by an improvement of the extravascular volume overload with *Goreisan* is much greater than the decrease in pulse rate by an improvement of the active-type reversed-Qi with *Gui-Zhi*, *Goreisan*, which contains *Gui-Zhi*, may have effect of increase in pulse rate or improvement of bradycardia in the total amount.

Another possible reason for this contradiction comes from “Our argument has been done with the concept of Qi.” This may be said, “Are both *Kampo*, traditional Chinese medicine (TCM), and *Keihou-Igaku* based on metaphysical concepts of which there

are no plausible scientific rationale for understanding Qi?" Or "Are there any effects of *Gui-Zhi* or its ingredients on the improvement or decrease of pulse rate pharmacologically?" To the best of our knowledge, there has not been any report on the in vitro cardiotonic action of *Gui-Zhi* like that of *Fu-Zi*. But, it may be said that "A drug may have two opposite effects on the disease", like the efficacy of low-dose dopamine as a renal-protective agent during vigorous diuresis for CHF associated with moderate renal insufficiency and that of high-dose dopamine without diuretic effect for CHF^(xvi). According to some reports, cinnamaldehyde in *Gui-Zhi* is a *central nervous system (CNS)* stimulant at low-doses and a *sedative* at high-doses^(xvii),^(xviii),^(xix). *And we may attribute such CNS stimulation (low-dose) and sedation (high-dose) to acceleration and suppression of catecholamine (mainly adrenaline) release from the adrenal glands. Briefly, it may be said that, on the one hand low-dose Gui-Zhi accelerates pulse rate through CNS stimulation directly and through promotion of urination by warming yang for diuresis or by eliminating dampness and diuresis indirectly. On the other hand, high-dose Gui-Zhi suppresses pulse rate through CNS sedation directly and through, indirectly, promotion of harmonizing yingfen and weifen by relieving exterior syndrome with pungent and warm natured drugs like Keishito (Ramulus Cinnamoni Decoction, or Gui-Zhi-Tang).*

So far we have outlined on the presumable reasons for successful treatment for bradyarrhythmia in aged dementia with *Goreisan*. Briefly, functions of *Goreisan* are not only to promote urination and to drain damp accumulation, but also to warm yang Qi. Our data and some reports suggest that *Goreisan* may be useful not only for the management of dizziness, edema, vomiting and diarrhea, but also for that of severe bradyarrhythmia in aged dementia. *Goreisan* is thought to be effective for the treatment of bradyarrhythmia in elderly patients whose sinus node and heart function are aggravated with advancing age.

We are facing a prominent aging society in Japan,

where the idea that "the care of the elderly is the responsibility of the family" has long been strongly held. Sometimes we encounter patients who are within indications for aggressive treatment in medically, but are out of curative indications of aggressive treatment in socially. For example, a super-aged dementia patient, whose family rejected nursing by themselves, is within indications for aggressive treatment in medically. In this case, the patient and one's family might choose palliative care instead of aggressive treatment. And this may lead to worse prognosis of the patient compare to that of the patient who took aggressive treatment. In those cases, through *Kampo* medical diagnosis and treatment, medical teams can develop comprehensive geriatric assessment (CGA) and offer true whole-person medicine, and this will lead to improvement of the patients' quality of life (QOL).

Conclusions:

This report suggests the possibility of using *Kampo* medicine for the treatment of severe bradyarrhythmia including SSS in elderly dementia patients. Further accumulation of the similar cases from patients in clinical settings and extensive molecular and cellular research into these syndromes are required to gain insight into severe bradyarrhythmia, including SSS, and to develop new target therapies and preventive strategies.

Additional remark (Acknowledgements):

(OZAKI K., et al. have been reported as "Three cases of severe bradycardia including Sick Sinus Syndrome in Elderly Dementia Patients Successfully Treated with Herbal Medicine *Goreisan* (*Wu-Ling-San*, or *Poria Powder with Five Herbs*)." at the 6th World Congress of Chinese Medicine 2009 Melbourne, Australia, Dec. 2009.

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Clinical Report 1 (Acupuncture)

Two Cases that had Treatments Effect with Infant Acupuncture Therapy

Takeshi Matsumoto

Center for Environment, Health and Field Sciences,
Kashiwanoha Acupuncture Clinic of Chiba University

[Introduction]

Since old days, there has been a special type of acupuncture called “infant acupuncture therapy” for the treatment of children in Japan. Although its origin is not fully elucidated, it is one of traditional acupuncture styles.¹⁾

Infant acupuncture therapy was popular in the Edo period (about 1600-1867) and mainly practiced in the surrounding areas of Osaka (Figure 1).²⁾ It has been administered to treat various major conditions generally seen in children of not only cries at night, enuresis, infantile malnutrition but also diseases of the respiratory system and diseases of the digestive system problems. For the treatment of pediatric patients, special needles of different shapes specifically designed for children are used. The modality of this type of acupuncture stimulates the whole body using non-insertive techniques such as touching and rubbing.

In recent years, fewer parents bring their children to pediatric acupuncture practitioners for the treatment of their children even in Osaka. According to a report, there are more people who do not know of the existence of a method of treatment for children, compared to those who do.³⁾

During the initial opening period of our clinic, only adult patients visited us and there were no chances of treating children. However, in the area where Chiba University Kashiwanoha Campus is located, one of leading corporations started the development of this area as a new residential area from about 2005 and many condominium buildings stood side by side. As a result, the households with children increased and the population of the area also grew year by year, and our acupuncture clinic had visits of infant patients. And so, for familiarity with and easy access to infant acupuncture, a half price discount on the regular adult fees has been offered for children of 10 years old or below since 2008. This discount information has been and is being distributed through such media as our website, fliers, and posters. Moreover, the activity of lecture meetings has been carried out even now to disseminate the information about infant acupuncture and to obtain people’s understanding.

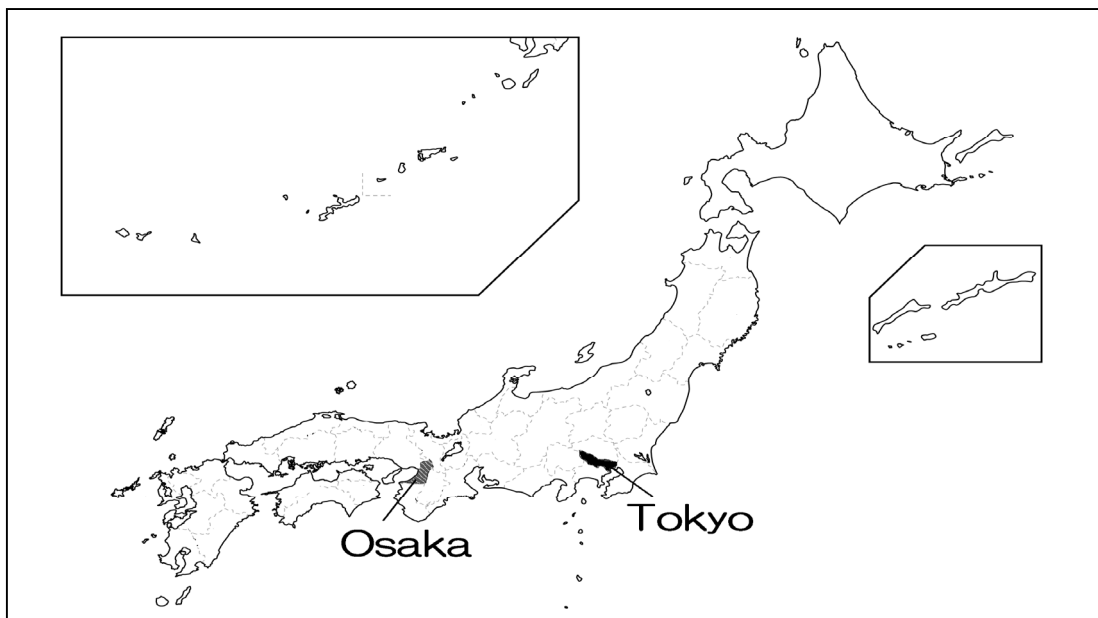


Figure 1 Map of Japan

As above, our clinic is performing everyday treatment aiming for a clinic open to children. The cases that had excellent results of Shonishin will be introduced below.

Case I

[Object and method]

Patient: N.H. 8 years old elementary school boy

Chief complaint: Nocturnal enuresis

Present condition: Height 130 cm, weight 25 kg.

As his father was the manager of a boys' rugby team, the patient also played rugby with him. The patient, who was all dark sunburned, was a thin type with less muscle. The body was stringy and hard. He always had a smile on his face. He was dependent on his mother and the youngest of three male siblings.

Anamnesis and complications: No special mention

Diagnosis: No special mention

Present illness: Although he was an elementary school boy, the frequency of bedwetting had been four times a week since he was little. His mother woke him up once at 12:00 midnight, but he became wet in the morning. As he was scheduled to go out for an extended learning (with lodgment), his mother wanted to manage to improve by that time. The child did not seek medical care from clinics or hospitals.

Assessment method

The patient was asked to paste a seal with his favorite pattern on the date of a calendar when he did not wet his bed.

Treatment method

He loved sports and was a good worker but he was skinny with stringy muscles of the entire body. In consideration of internal body cold, the whole body was stimulated for five minutes with disposable infant needles made by SEIRIN Co., Ltd. (Figure 2). Especially the lower legs that were found intensely tense on palpation were smoothly rubbed with the flat part of the needle to ease tensions. And the nearby areas of 築賓 (K19) zhubin, 三陰交 (SP6) sanyinjiao, and 鄰門 (PC4) ximen acupoints that

showed strong responses to tensions were stimulated with pressing force with the relatively pointed part of the pediatric needle.



Figure 2 Disposable infant needles

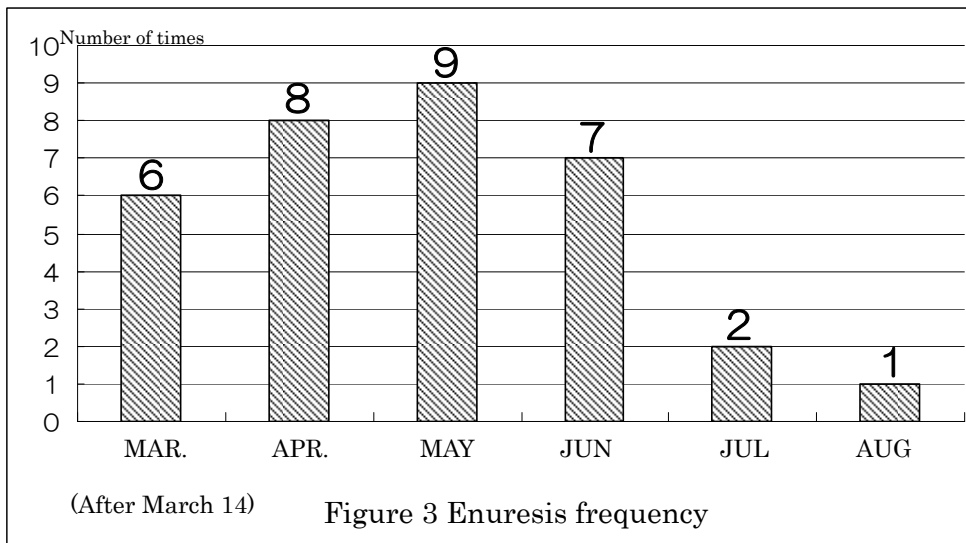
Cooperated by SEIRIN Co., Ltd.

[Course]

The frequency of enuresis is shown in Figure 3.

In 2009

- 1st treatment (March 14): The patient felt well.
- 2nd treatment (March 23): After the previous treatment, the frequency of four times a week reduced a little.
- 3rd treatment (April 11): Went to the grandmother's and stayed there for a long time, which changed his life rhythm.
- 4th treatment (April 27): The frequency reduced after returning home.
- 5th treatment (May 18): Due to consecutive holidays for a long time (Golden Week), the bed time became irregular, and the rhythm changed.
- 6th treatment (June 15): Arouse without being woken when he has an urge to urinate.
- 7th treatment (July 13): Became able to hold up urine till 5 o'clock in the morning without being woken. When it became 5 o'clock, went to the toilet and then returned to bed.
- 8th treatment (August 31): Was able to withstand until the time to rise.



[Consideration]

Many of the mothers who visit our clinic for treatment of nocturnal enuresis of their children desire the approach that does not require waking the child during the midnight. And such mothers visit our clinic as they may have concerns and fears from various sources of information, like websites, that awakening children at midnight will cause to inhibit growth hormone release, affecting their growth, and that the disturbance of antidiuretic hormone secretion will affect the control of urine volume during the night. However, the Guideline presented in June 2004 for diagnosing nocturnal enuresis prepared by The Japanese Society on Enuresis⁴⁾ provides three main treatment modalities of lifestyle guidance, behavioral treatment, and medicinal treatment. The alarm treatment for enuresis in the behavioral treatment category where you wake the child during the night to toilet has stable effects is used as treatment. The matter of waking during the night needs to be discussed. However, upon consultation with the patient's mother, treatment was carried forward for the time being by waking the patient to take to the toilet. The patient's mother had the instructions to adjust the patient's life rhythm, to spread the amount of fluids the patient drank through the

morning, afternoon, and evening, to cut down on salt intake, and to prevent him from becoming chilled. The patient wet his bed frequently in April and May since he often went out and had the long holidays in these months and the life rhythm of the patient changed. Afterward, he resumed his stable and normal life rhythm. He looked forward to showing

the practitioner the seals pasted on the calendar and trustful relations could be built up, which further inspired him to strive for improving his life rhythm. Although not many documents have been released on treatment effects of nocturnal enuresis in children, effectiveness has, in effect, been reported.⁵⁾

The patients who visits clinics with the chief complaint of nocturnal enuresis are of relatively higher age and the insertive treatment for these children is often performed using Goushin.⁵⁾⁶⁾⁷⁾ For the subject patient, infant needles were used as he had a strong fear, targeting to ease excessive whole body tensions confirmed on palpation. As a result, stringy excessive tensions in the body were eased; the muscles became moderately elastic condition as a whole; and his physical rhythm had adjusted - these may have caused the improvement of nocturnal enuresis in this case.

Case II

[Object and method]

Patient: S.A. one year and 8 month old boy

Chief complaint: Difficulty falling asleep, poor appetite, sleep lightly.

Present condition: Height 89 cm, weight 12 kg.

Anamnesis and complications: No special mention

Diagnosis: No special mention.

Present illness: The patient was one year and eight months old. He began to wake up during the night from a year ago. He had been waking up every two hours for five months and when waking up, he walked to the refrigerator to drink milk. After drinking in sips, he went back to bed and sleep. He became very picky about food and his food intake was reduced.

He went to bed about 8:00 pm and it took him two hours to fall asleep.

Daytime napping was once a day from about 13:00 to 14:00.

Cow's milk was started from 8 months. At the present time, he took a mixed diet with food.

Treatment method:

The whole body was stimulated for five minutes with infant needles made by SEIRIN Co., Ltd. Especially the upper arms and lower legs were smoothly rubbed with the flat part of the infant needle to ease strong tensions confirmed on palpation.

[Course]

In 2010

1st treatment (July 12)

S: The patient had difficulty falling asleep, his sleep cycle was short. He has little appetite.

O: No hardness was found in the abdomen, and the condition was not so bad.

Arms and legs were lacking of power, he did not have much energy.

A: He did not show reluctance to infant acupuncture therapy and quietly received it. He was in a good mood.

2nd treatment (July 15)

S: From the day of the previous treatment onward, he went to bed at 8 o'clock in the evening. Although he woke up at the midnight, he did not

walk to the kitchen, but groaned a moment and fell back asleep. His mother did not need to read a picture story book to him. So she really felt greatly relaxed.

O: Skin turgor on the body surface became adequate and the balance of muscle tensions became appropriate.

3rd treatment (July 22)

S: After this, he was in good condition and slept well. He fell asleep easily and had appetite.

A: As the patient was in good shape, the treatment was finished on the day.

[Consideration]

Stimulating the skin is essential to mental and physical developments of children. According to a study by Schanberg and Field,⁸⁾ rats of 8 to 10 days old that were being separated from their mothers for two hours showed lowered levels of growth hormone secretion, but rats that had tactile stimuli did not show a reduction in the secretion of growth hormone. They also reported that in immature babies who had the skin stimulated every day, the body weight increased faster than those who did not have it.

Skin stimulation in children is significantly linked to their growth. For this reason, the state of inner surface such as being excessively sensitive and emotionally unstable appears readily on the body surface. In performing infant acupuncture therapy, the acupuncturist reads the information from the body surface and gives stimulations appropriately according to the information. The skin of children, which is thin and sensitive, responds acutely to external stimulations or irritations, so that small amounts of stimulation easily cause effects. Thus, the effects appeared with the fewer number of the treatment in the patient. Usually one time treatment with infant acupuncture therapy is finished in minutes.⁹⁾ The

time to simulate was only about five minutes in the patient. Too much stimulation may make the child exhausted or develop fever. When the author first began the infant acupuncture therapy, some of the children became feverish. From the experiences, the length of one treatment was determined as five minutes.

The suitable ages of the children to receive infant acupuncture therapy are generally from the ages that can have an understanding of inserting needles down to a few months of age. However, infant acupuncture therapy is not only for children. It may be applied to aged people who are sensitive to stimuli or the patients who have depression. Yoshimura¹⁰⁾ uses infant needles to prevent the progression of dementia.

A right amount of stimulation is comfortable to people of any age. In recent years, there is a touch therapy appealing to the importance of skin-to-skin contact between mother and child, which is attracting worldwide attention.¹¹⁾¹²⁾¹³⁾ In the modern age of Japan when it is easy to notice children who caused or are causing problems or those who are emotionally unstable, the importance of skin ship or physical contacts during infancy has been brought to realize once again.¹⁴⁾ We as practitioners of acupuncture and moxibustion think that there comes the time when we have to make once again the method of skin contact stimulus, which has been taken over from the ancient times, and infant acupuncture therapy, which is the culmination of tradition and techniques and the method of providing treatment by acupuncture points or catching responses, more familiar or accessible to people.

Introduction of facilities:

Chiba University, a national university corporation, has the campus of the Center for Environment, Health and Field Sciences in the

Kashiwanoha area in Kashiwa-shi of Chiba-prefecture of Japan.¹⁵⁾¹⁶⁾ In the campus, which was formerly used mainly for horticulture, the Kashiwanoha Kampo Clinic of Chiba University was established in June 2004 to realize the “town-building based on environment and health,” implementing the tradition and philosophy of Oriental medicine.¹⁷⁾¹⁸⁾ This Clinic provides treatment using mostly Kampo medicines and prescribes extract products and decoctions made with medicinal herbs covered by the national health insurance program. In November 2006, the Tsukuba Express, a new railway line, opened near the campus of the university. In conjunction with this, Kashiwanoha Acupuncture Clinic of Chiba University opened in a giant commercial facility near the Kashiwanoha station.¹⁹⁾ This acupuncture clinic was founded based on the idea that if the facility is a shopping mall with many people casually milling around, physicians of Chiba University could grapple with disease-prevention measures with Oriental medicine. It is the first case in Japan that a national university corporation has opened an acupuncture clinic. Furthermore, it is quite unusual for the acupuncture clinic to be operated as a tenant of a commercial facility. Chiba University launched this project for the purpose of contributing to the community people.

The numbers of patients who visited the Clinic during the one-year period from the opening date of November 22, 2006 to November 22, 2006 were 448 of new patients, 312 of female, 136 of male, and the total of 2,774 patients. The number of treatment days during the one year period was 234 days and the average number of patients who visited the Clinic was 11.9 per day. The average age was 53.8 and the age distribution was in their 50s, 60s, 30s, and 70s in descending order. Generally among the chief complaints of the patients who receive

acupuncture and moxibustion treatment, motor organ disorders accompanied by pain, such as stiff shoulders and low back pain accounts for 80% in Japan.²⁰⁾²¹⁾ Similarly the most patients visiting the Clinic complained of motor organ disorders followed by headaches, sensitivity to cold, noise in the ear, general malaise, and sleeplessness.

The number of patients of Kashiwanoha Acupuncture Clinic of Chiba University began to increase year by year after the third anniversary and the Clinic as business grows steadily. However, it has been relocated into the present Kashiwanoha Kampo Clinic of Chiba University on April 2010 in order to place a strong emphasis on research and studies, which are now being progressed from the aspects of both acupuncture and moxibustion, and Kampo.

As of April 2011, four years have passed. The one-story Kampo Clinic and the Acupuncture Clinic stand in the idyllic campus where there are vegetable fields and fruit field (Figures 4, 5). With facilities of 3 care beds and 1 massage bed, 4 practitioners (one is a staff member specialized in massage therapies) provides treatments with acupuncture and moxibustion and massages. In this campus, professionals from different areas of horticulture, education, pharmaceuticals, and medicine have come together and this enables to take approaches from different angles for a single purpose. In the study on growing mugwort leaves used for moxa, its selection, and house cultivation – these are now taking place - a collaborative project is now being carried out between the professionals who have knowledge of moxa, its properties, production and research, and the professionals who have the knowledge of qualities of mugwort leaves (a material of moxa), its cultivation, and proliferation. As such, a study that reflects the characteristics of the field scientific center is being carried forward.



Figure 4 Kashiwanoha Acupuncture Clinic of Chiba University



Figure 5 In the treatment room

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Clinical Report 2 (Kampo Medicine)

Headache 1

Mihoh Koga, M.D., Kampo Specialist
 Research Assistant of Division of Clinical Pharmacology
 and Therapeutics and Division of General Medicine
 Jikei University School of Medicine

[Introduction]

Headache is a symptom frequently encountered in an outpatient office specialized on Kampo.

Generally, this condition is classified into primary headache, which in turn is classified into 1) migraine, 2) tension headache, 3) cluster headache, 4) headache associated with overuse of the medications, and secondary headache occurring in the presence of an underlying disease. Even though remarkable progress has been achieved regarding the pharmacotherapy of headache, the number of patients suffering from headache still remains high. The migraine guidelines of the American Headache Society® (AHS) recommend that "treatment of acute conditions should be individualized". Moreover, regarding the ideal pharmacotherapy for the prevention of attacks.

The relationship between diagnoses according to the above described classification and specific "patterns" has not yet been clarified. Yet, through integration of TCM diagnostic methods a useful concept pertaining to the "individualized therapy" can possibly be provided.

Practicing Kampo therapy and looking back at cases with chronic headache, it appears that often several patterns are involved. So far there has been a tendency of patterns like cold, blood deficiency, blood stasis and phlegm being rather frequent, but I believe the heat excess patterns are also on the rise. Moreover, in cases of headache associated with refractory diseases or overuse of the medications, I have often experienced that the use of the formula that expel blood stasis led to an early alleviation of the symptoms.

In the present paper I would like to briefly discuss a few cases of tension headache and migraine I have seen in our outpatient department. Each case will be discussed focusing on the qi-blood-body fluids aspects, trying to keep the terminology as simple as possible.

■ Cases

<Tension headache; prolonged cold, phlegm>

Case (1): 46 years, female, housewife, clinic visit in January XX

Chief complaint: right shoulder pain, headache, dizziness (floating feeling), pollinosis

Anamnesis: at age 35: enucleatic myomectomy

At age 45: total hysterectomy because of myoma induced anemia

At this time there were adhesions of the small intestines, requiring reoperation, during which a portion of the small intestines was removed.

At age 45: pollinosis

Present illness:

Development of a chronic sense of fatigue following the total hysterectomy, at rest discomfort that felt like the right were about to solidify and pain of the right shoulder joint was so severe, that it prevented sleep; chilling around the waist and the thighs and a generalized feeling of edema over the entire body. Considering the presence of pain as if from pinching the right upper arm and stagnation of liver qi as well as blood deficiency into account, the formula *nijutsuto and kamishoyosan* were prescribed. After 4 months of treatment the shoulder pain had been alleviated almost completely and the pollinosis considerably.

By the sixth months of the treatment the headache and sense of floating grew worse and symptoms were highly sensitive to low atmospheric pressure. The headache was reportedly associated with a slightly depressive heaviness. Recurrence of the temporarily relieved edema of the legs. The patient originally has a tendency towards

indigestion. The husband is currently living alone abroad because of his work.

Findings:

Moderate build, skin slightly brown. Good appetite, bowel movements and micturition normal, but has a tendency towards constipation when nervous. During bathing the patient felt on the contrary cold. She was the type of person that does not sweat. Her physical condition used to deteriorate in spring. Pulse was deep, slippery and wiry / weak right cun pulse, the tongue was pale red but had a thick white fur coating its entire surface and teeth marks, sublingual veins were somewhat engorged. Mild degree of fullness, tenderness or discomfort of the hypochondrium.

Pattern: Spleen – stomach deficiency -> phlegm, upward harassment of wind phlegm

Prescription: *hangebyakujutsutenmato*

Following the third day of taking the prescription the perceived fog in the head cleared and left the patient feeling reportedly invigorated. The heavyheadedness too improved. She experienced regular bowel movements, became able to sweat when bathing and thus felt fine. Temporarily switching the prescription to *ryokeijutsukanto* resulted in recurrences of the headache, regular administration of *hangebyakujutsutenmato* twice daily and an additional dose when symptomatic allowed to control the symptoms and the patient is currently continuing this schedule. The patient reported that taking the medication helps to brace her physically and makes her feel lighter both physically and mentally.

<Tension headache; spleen deficiency, countercurrent of phlegm>

Case (2): age 47, female, dental assistant

Chief complaint: headache, stomach disharmony, amyloidosis of the skin

Anamnesis:

After the death of her husband she became

nervous and anxious. At that time she was diagnosed with amyloidosis of the skin and Sjögren syndrome. Headache often developed in case of fatigue or when she had been under stress; endurance of the symptom generally led to a gradual increase in the pain, so that she had to take analgesics and lie down. The stomach responded sensitively to the mental status and she complained about heartburn, stomach disorder and a sense of distention.

Findings upon first visit:

Fair-skinned and leptosomatic habit, sloping shoulders. Visible amyloid depositions on the abdomen and lumbar regions. Easily sweats on the palms. Poor sleep. Occasionally soft stools. Thin and weak pulse, the tongue being pale red with a thick, greasy white fur, stickiness within the mouth. Engorgement of sublingual veins. Abdominal palpation reveals clapotage and tension of the abdominal wall.

Pattern: spleen deficiency, qi stagnation, countercurrent of phlegm

Prescription: *bukuryoingohangekobokuto*

Course:

She started to enjoy her meals, the severity of the headaches decreased and often she even forgot about them. No use of analgesics. Use of single doses of *goreisan* produced marked relief in case she had a headache. Later, targeting the easy fatigability, xerophthalmia, poor sleep and the skin symptoms her condition improved using a combined prescription with *ninjinyoeito*, she could sleep soundly and the headaches disappeared.

Four years later, after she finally came to terms regarding the death of her husband and her stomach maintained a good functional condition, treatment with *bukuryoingohangekobokuto* was discontinued. The nature of her work facilitated the development of high tension and easily led to the development of posture induced shoulder stiffness,

which resulted in headaches (dull pain), but since the condition of her stomach had improved, the effects of *goreisan* had weakened, while *shakuyakukanzoto* now had become markedly effective. It turned out to be a medication, which in single doses provided refreshing relief and bestowed upon her a feeling, as if the neck were straightening and sometimes even extended to the head.

<Tension headache; spleen deficiency, cold phlegm, blood deficiency >

Case (3): age 40 years, female. Assistant in former family business (restaurant)

Chief complaint: headache, anxiety

Anamnesis:

At the age of 20 iron deficiency anemia (she sometimes takes iron supplements)

At the age of 37 hypertension (initiation of antihypertensive pharmacotherapy)

Present illness:

From the age of 38 her nervousness increased, a sense of her body floating and palpitations appeared; she used benzodiazepine type tranquilizers 2 to 3 times a day; from the age of 39 she took *ryokeijutsukanto* for about one year after which the symptoms had almost be alleviated. The use of western medications was reduced to about once per month for preventive purposes and she started to work as a kindergarten assistant. Yet, she used to complain about headaches lasting 2-3 weeks. The headaches were located on the forehead like a headband, producing a pain as if this headband were tightened, so that she used to press down on the painful areas while taking deep breaths and reported that warmth provided some relief of the symptoms. Severity of the symptoms increased in the evening with increasing fatigue. On this occasion the symptoms had appeared 5 days ago on the last day of her menstruation.

Findings:

Fair-skinned obese, normal appetite, sleep and excretion. Becomes easily nauseated. Her condition used to vary with the menstrual cycle. The tongue was enlarged, pale white, had teeth marks, sublingual veins had disappeared, the pulse was deep and thin, the abdomen showed a generalized hardness and was mildly tender, there was fullness, tenderness or discomfort of the hypochondrium and chilliness of the lower abdomen.

Pattern: blood deficiency, phlegm

Prescription: *ryokeijutsukanto plus tokishakuyakusan*

Headaches tended to become worse during the latter half of the menstrual cycle and the lingual findings too suggested the necessity to take blood deficiency into account, but since the so far prescribed *ryokeijutsukanto* could not be expected to have any blood supplementing effects, *tokishakuyakusan* was added. After the ingestion marked improvements were observed and four days later the symptoms had disappeared. Later, while the dose was adjusted according to the findings, after continued treatment using the combined formulation with *tokishakuyakusan* the headaches did not occur any longer.

And yet, severe headaches occurred on days typhoons hit the country and on these occasions the patient complained, that she would on the contrary like to cool her head. The body felt hot and she became restless and nervous. Originally she did not like the summer. *senkyuchachosan* was prescribed and had marked effects, leaving her feeling refreshed and comfortable.

After that the administration of *tokishakuyakusan* from autumn through spring and a combined formulation with *senkyuchachosan* from the rainy season through summer prevented aggravation of the headaches and stabilized the patient both physically and mentally.

Front Line of Kampo Pharmacology

Review 1 of Pharmacology-related Academic Meetings

Toshiaki Makino, Ph.D.

Associate Professor, Dept. of Pharmacognosy

Graduate School of Pharmaceutical Sciences

Nagoya City University

This series will introduce the recent research and studies relating to Kampo medicines presented at academic conferences. The second installment of the series provides the presentations made at The 57th Annual Meeting of Japanese Society of Pharmacognosy held in Tokushima in September 2010.

Research for quality preservation of crude drugs and their discrimination

Shimura, et al. of Mie Prefecture Health and Environment Research Institute reported that they have developed a method of analyzing ephedrine species contained in over-the-counter Kampo extracts and established a HPLC analytical method to efficiently isolate and quantify ephedrine, pseudoephedrine, norephedrine and methylephedrine.

Wakaba, et al. of the National Institute of Health Sciences reported that metabolome analysis using ¹H-NMR is a useful method for correctly discriminating Pinellia Tuber from Arisaematis Rhizoma, both of them have very similar outward appearances.

Kobayashi, et al. of Osaka University reported that metabolome analysis by UPLC-TOF-MS and GC-TOF-MS is an effective method for identifying the original plant of Japanese Angelica Root.

Nakamura, et al. of Osaka University reported that they have made cluster analysis based on ICP-MS data to study the possibility of substituting gardening varieties for the root of *Paeonia lactiflora*

used as a crude drug. And they brought out the finding that several horticultural varieties can be applied to medicinal uses.

Research of the origins of crude drugs

Asahina, et al. of Ochanomizu University tried to identify the origin of Sekkoku being distributed as a crude drug on the markets in China and Hong Kong and clarified that most of Sekkoku available in the markets originate from the root of *Dendrobium officinale* and some originate from the root of *D. devonianum*.

Ooi, et al. of Kanazawa University studied on the origin of “the root of *Hedysarum polybotrys* (Shingi in Japanese name)” from its growing areas in mainland China and by referring to documents and have clarified that a certain volume of *Hedysarum polybotrys* (Fabaceae) has been used as Astragalus Rhizome since the period of North and South Dynastie.

Study on the cultivation of crude drug materials

Kabau, et al. of Kochi University reported that they have established conditions satisfying the Japanese Pharmacopia standards for the cultivation, in Kochi prefecture, of *Atractylodes lancea* for the use as the raw material of a crude drug Sojutsu, (*Atractylodes Lancea* Rhizome).

Basic pharmacological study on crude drugs and Kampo medicines

Chiba, et al. of Kitasato University obtained differences of traditional usages between Ginger and Processed Ginger in terms of TRPV1 agonist activity, clarifying that although the titers of 6-gingerol and 6-shogaol of guiding components apparently differed, there were no differences as crude drugs.

Shimato, et al. of Nagoya City University reported that they have investigated differences between *Atractylodes Lancea* Rhizome and *Atractylodes Rhizome* based on the inhibition of NO production from macrophages in the extract prepared from appropriately DNA-tested 48 plant specimens, with the results that although there were no differences in pharmacological titers between *Atractylodes Lancea* Rhizome and *Atractylodes Rhizome*. However, the activity was significantly weak in *A. ovata*, if the discrimination of species was necessary, compared to other plant species.

Yasui, et al. of Aichi Gakuin University reported that they have searched for active ingredients of *Aralia* Rhizome as a measure of retinoic acid receptor agonist activity and isolated ent-pimara-8(14),15-dien-19-oic acid.

Fukuda, et al. of Pola Kasei Kenkyusho reported that they have studied PPAR α agonist activity of Coix Seed and isolated 9-oxo-10(*E*), 12(*E*)-octadecadienoic acid.

Fukai, et al. of University of Toyama reported that the essence of *Bambusae Caulis* extracted by the hot water extraction method has the action of inhibiting viral infection in vitro and polysaccharides are the active substances.

Somehara, et al. of Nagoya City University reported that evodiamine contained in *Euodia Fructus* has the action of promoting the absorption of glucamine in the digestive tract.

Sugimoto, et al. of Yokohama College of Pharmacy reported that neferine contained in a *Nelumbo* Seed gives antidepressant actions mediated by the serotonergic nervous system in mice.

Ishida, et al. of Showa University reported of the action of Ginger on suppressing an increase in blood

glucose levels in mice. They also reported their finding that suggests Ginger's usefulness for metabolic syndrome.

Morinaga, et al. of Kobe Pharmaceutical University reported that they have evaluated the analgesic action of *Belancandae Rhizoma* in mice and isolated the active ingredient of hydroxytectorigenin.

Morikawa, et al. of Kinki University reported that they have evaluated the action of *Picrorrhizae Rhizoma* on the inhibition of hepatic impairment in mice and isolated the active ingredients of plantamajoside and isoplantamajoside.

Joan, et al. of Kyoto University reported that the oral administration of Cinnamon Bark powder to mice with gastric ulcers induced by ethanol and hydrochloric acid have shown that Cinnamon Bark has effects on the prevention of gastric ulcers.

Muroga, et al. of Kanazawa University have evaluated the in vitro anti-inflammatory action of *Lycii Cortex* and identified active substances of (10*E*, 12*Z*, 15*Z*)-9-hydroxy-10, 12, 15-octadecatrietic acid that inhibit the histamine release from basophilic leukocytes.

Yonekura, et al. of Meijo University reported of the inductive action of regulatory T cells of *juzentaihoto* (Ten Strong Tonic Herbs Decoction), clarifying that not only CD4⁺CD25⁺ T cells but also CD4⁻ cells are involved in this action.

Medical History in Japan

"Historical Significance of the Standardization of Acupoint Locations", the Second Japanese Acupoint Committee (1)

Makoto Mayanagi
Graduate School of Humanities
Ibaraki University

Makoto Mayanagi "Historical Significance of the Standardization of Acupoint Locations", the second Japanese acupoint committee "Detailed Guide to the Location of Acupoints" from the classics to the WHO standardization", pp 411-422, Tokyo, Ishiyaku Publishing, June 2009 (partially revised)

The historical significance of the present day will only be known in the future. Nevertheless by going back into history it should be possible to catch a bird's eye view of the historical role of the standardization of acupoint locations made on this occasion.

In the past acupoints were standardized three times. The first time was approximately during the first century and constituted standardization on a "conceptual level". This had the common purpose of a conceptual clarification of the meaning of meridians (channels) as prerequisite for acupoints and the very nature of acupoints themselves. The second standardization in the second century represented a unification and standardization of various ideas about meridians and acupoints that had sprouted from the first standardization on a "theoretical level". The third standardization occurred after acupuncture and moxibustion therapy has spread all over China in the 11th century and the Chinese government realized the necessity of a support for this useful therapy, leading to a unification and standardization on a "national level".

These first to third implementations were standardizations based on the subjective views of one or several scholars. And today, at a time when acupuncture and moxibustion is about to assume

a role in the medical care worldwide, based on modern scientific views, a standardization allowing an objective verification was needed. And that is precisely the nature of the current standardization. Historically the fourth of its kind it probably can be designated as an objective standardization on a "global level".

Based on the above I would like to trace the history of the discovery of meridians, acupoints and their changes, as well as the standardization process.

1 Meridian concepts and moxibustion treatment prior to the second century BC

[text excavated from the Mawangdui tomb]

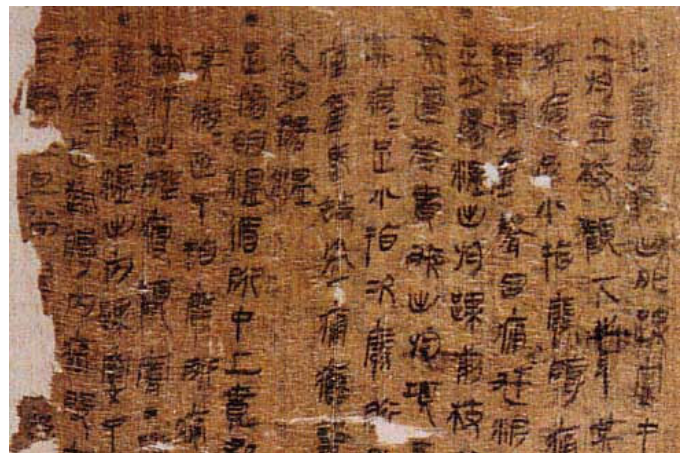


Figure 1 足臂十一脈灸經 Zubi Shiyi (11) mai Jiuqing

The oldest firmly established text pertaining to meridians is not a text that has been handed down above ground, but has slept under ground until its excavation. The tomb No. 3 site of Mawangdui in Hunan province in China, in the outskirts of Changshayao is the site of the excavation of a group of medical texts. One of these has been written on a silk cloth and named after its excavation the "『足臂十一脈灸經』". Figure 1 shows that it was written in the seal-engraving style of writing Chinese characters and is a text dealing with moxibustion treatment of 11

meridians on the arms and legs, but its content antedates the contents of the chapter on meridians (jing mai) in the *Ling Shu*.

These characters are today completely deciphered [1]. For example, the first line in Figure 1 can be interpreted as "The greater yang warm (meridian) begins at the hollow of the external malleolus ...". However, in the underlined character "warm" the portion meaning "speak" may actually represent "eye" and therefore interpreted as the character for (blood) vessels or meridian (mai). This section corresponds to the "The greater yang meridian ... (and its branching vessels) ... behind the external malleolus ..." part appearing in the chapter on jing mai in the *Ling Shu*. Further, line 5 shown in Figure 1 denotes "The lesser yang (warm) meridian of the foot originates in front of the malleolus ..." and this corresponds to the "The lesser yang gallbladder meridian ... (and its branching vessels) ... originates in front of the malleolus ..." part appearing in the chapter on jing mai in the *Ling Shu*. The "*Ling Shu*" was thought to be a forged text from the later period of the Qing dynasty, but this example here clearly provides its firmly established evidence.

Moreover, not only the 『足臂十一脈灸經』, but also the texts named the first and second volume of the "Yin-yang shih-yi mo-chiu ching" and materials of similar contents have been unearthed simultaneously with aforementioned silk texts [2]. These Mawangdui medical texts have been burial accessories for a woman who died a few years before 168 BC. The woman's body had not been decomposed and was unearthed as a still moist corpse, suggesting that it had been buried immediately after death and therefore the Mawangdui medical texts also had remained buried since the second century BC. Yet, the characteristics of the ideograph form used in the Mawangdui medical texts suggests, that they

have been transcribed sometime between the Qin dynasty and the early Han dynasty, so that the inception of the content probably goes back to pre-Qin times.

These Mawangdui medical texts offered the following insights. First, 11 meridians corresponding to the five viscera and six bowels of later generations were recognized, but no vessels corresponding to the modern pericardium meridian, conception and governor vessels are mentioned. In other words, the twelve meridians for six viscera and six bowels described in the chapter on meridians in the "*Ling Shu*" are apparently a concept of later ages. While there are many entries pertaining to moxibustion treatment, indicating "use moxibustion on the greater yin meridian of the foot for all kinds of diseases", no acupoint locations are given. Moxibustion was applied mainly on the hands and feet only, but seemingly not on the torso. Needling methods were not mentioned either.

In other words, the meridian concept was presumably developed first and acupoints discovered later. These texts also suggest that moxibustion treatment based on this meridian concept had been developed first and acupuncture only later.

[Origin of moxibustion treatment]

Why has moxibustion been developed first and has mugwort (*Artemisia princeps*) been used? Professor Jianmin Li from the Academia Sinica in Taiwan has focused on the employed ignition method [3]. In other words, in China mugwort has customarily been used since ancient times as a fumigation smoke to drive away evil qi and since mugwort contains a lot of essential oils, it easily ignites. For that reason the focus of round carved ice lenses has been used to ignite the mugwort. This ignition technique has been used since ancient times.

Adding the authors own conjectures, among the various ignition methods since ancient times this method was probably considered to be strongest in its yang nature, since the sun provided the source of the ignition. On the other hand, human body temperature gradually decreases over time and at the end of this process death is recognized. This was considered to be caused by evil qi. In other words, because evil qi deprives the body of its temperature, it has been thought since ancient times to be a form of yin qi. I believe therefore that this justifies the interpretation that mugwort was ignited by the sun to expel the evil qi and the elimination of yin qi using this yang qi led to the development of moxibustion treatment.

[Excavation of dolls in Mianyang]

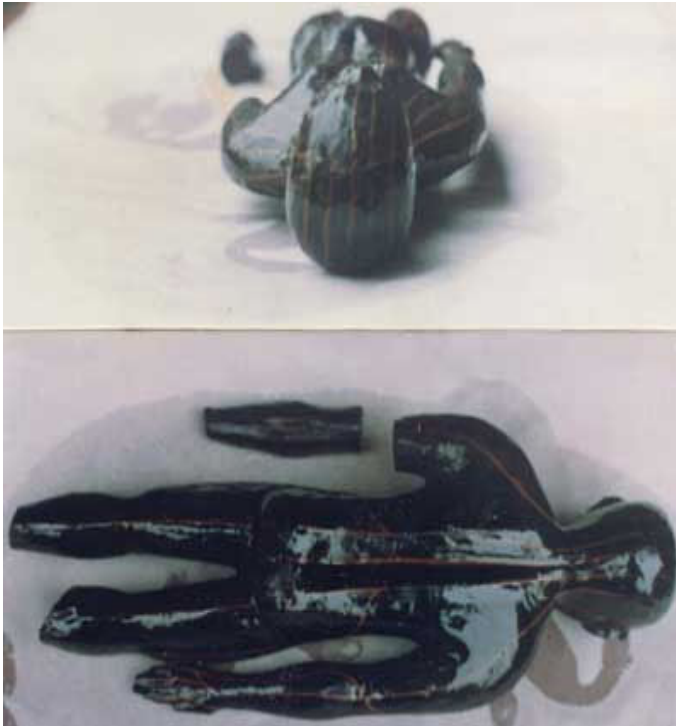


Figure 2 Wooden black lacquer doll (early Han period)

On the other hand, from a grave dating back to the early Han period in the city of Mianyang of Szechuan province a wooden doll has been

excavated, the body of which is painted in black lacquer [4]. Judging from the coins excavated at the same time allows to infer that the burial took place between 179 and 141 BC. As Figure 2 shows, there are on the body surface 9 pairs of symmetrical lines running up- and downward as well as a midline on the back drawn in red lacquer. However, no markings or characters that might denote acupoints are found. Although interpretation of these red lines as blood vessels may not be impossible, there is no vessel in the center of the back, so that these lines indicate more likely meridians than blood vessels. If that is so, the central line on the back conceivably indicates the governor vessel and the other 9 lines the three yin and three yang vessels of the hand and the three yang vessels of the feet. It should be noted then, that there are no three yin vessels of the feet.

The above mentioned Professor Jianmin Li also directed his attention to the drawn governor vessel that is not correlated to the viscera and bowel concept and discussed in detail the origin of this governor vessel. I can add my own speculations to this. The part of the body surface most resistant when exposed to cold is the face, so that the face was envisioned as of an area where yang qi accumulates. For this reason all the yang meridians gather on the face, while conversely the yin meridians follow a course gathering in yin areas. On the other hand, human (male) external secretions apart from the excretions are saliva from the mainly yang mouth and semen from the mainly yin reproductive organs. For that reason the concept that large amounts of secreted saliva flow via the spinal cord, that is the governor vessel, into yin regions to supplement semen has also been formed in ancient times. The concept that the governor vessel is the route for the circulation of saliva and

semen is correlated to the origin of the development of Taoist sex practices (fang shi) or the gymnastic breathing exercises called "guiding and pulling" (Tao yin) and later the governor vessel was considered to be of great importance for the Taoist sex practices and the guiding and pulling exercises.

Moreover, on this figure no lines were drawn for the conception vessel and the three yin meridians of the foot. The conception vessel is a meridian also related to pregnancy and since ancient times there seem to have been the concept that viewed the conception vessel as a meridian of women. And since all of the six yang meridians, the governor vessel and the three yin meridians on this figure are strongly yang in nature, Professor Jiro Endo of Tokyo University of Science suggested, that the figure probably represents a male.

[Development and fusion of the meridian concepts]

Based on the above description it seems that there have been different concepts regarding the origin of the conception vessel, governor vessel and 12 regular meridians of the six viscera and six bowels. The 11 meridians recorded in the medical texts of the Mawangdui correspond to five viscera and six bowels and are considered to be a concept designed for therapy. Thus, the 12 regular meridians of the six viscera and six bowels have developed during later ages. On the other hand, the figure from Mianyang reveals the initial stages of a combination of the concepts pertaining to the conception vessel and governor vessel through the Taoist sex practices in correlation to reproduction and birth with the yin and yang meridians. In the various chapters of the "Su Wen" and "Ling Shu" the main differences in the dialog represent differences among schools and since several school regarding the meridian concept were established, their fusion undoubtedly proceeded along several distinct stages.

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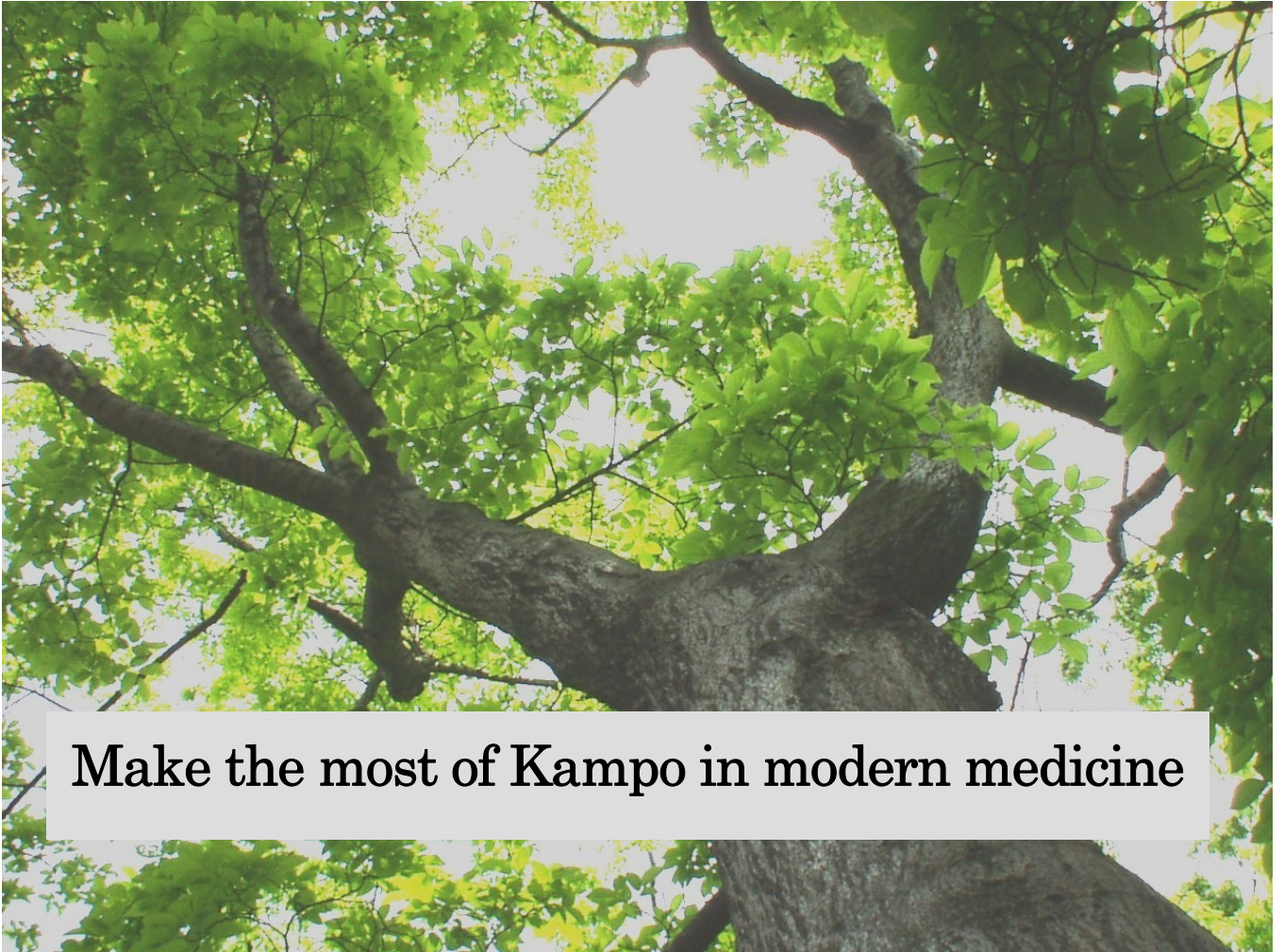
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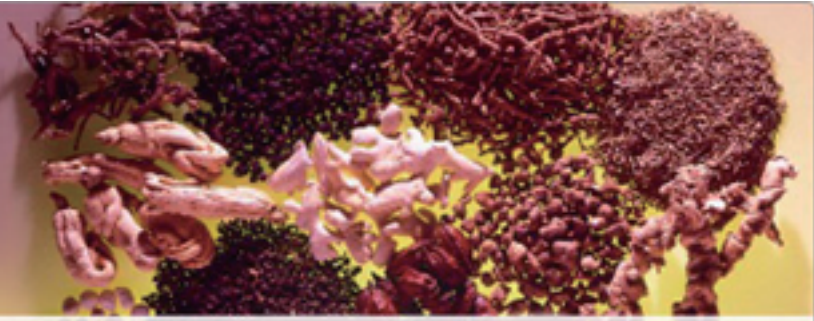
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