

Kampo Medicine - Current Research

Essentials of Pediatric Kampo Medicines (1)

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Introduction

Twelve years have passed since Kampo medicine has officially been integrated into formal medical education in Japan and by now almost all universities offer relevant lectures. There seems to be a gradually increasing interest in Kampo medicines as applied to the field of pediatrics. However, apparently many pediatricians still seem to be under the impression, that both Kampo as a subject and Kampo medicines are difficult to understand.

The author has for a long time been trying to systematize Kampo as applied to pediatrics (for convenience termed in this article "pediatric Kampo") and thereby facilitate comprehension¹⁻³. Therefore I would like to arrange in this article the usage of Kampo medicines following modern clinical pediatric concepts and classified Kampo medicines from the aspect of their beneficial effects. Also, since I will explain individual Kampo medicines in greater detail later, in this article the relevant descriptions have been kept to a minimum.

What are Kampo Medicines?

Kampo medicine usually refers to combinations of several crude drugs (roots of plants, stalks, fruits, minerals, small animal parts subjected to simple processing) that are used for therapeutic purposes, thus representing complex compositions containing many chemical substances. Astonishingly, the basic compositions of most of the Kampo medicines currently used in Japan in the form of extracts have already been established 2,000 years ago, but no historical materials detailing the process of this establishment have been left behind.

The people in ancient China likely chose drugs in order to survive based on primitive sensation and experience, thereby compiling a group of natural products, later combined certain forms of processing and in this way conceivably created through enormous, cumulative efforts said Kampo medicines suitable to treat a variety of pathologic conditions. This work was done at a time when neither statistical processing nor analysis of the components were possible. To accomplish it, the people had to rely solely on the elicited body reactions and their very keen observation, so that this unimaginable work rightfully should probably be called a piece of intellectual property of the human race, something that probably cannot be build a second time.

Multiple therapeutic effects of complex compositions

A characteristic of Kampo medicines as drugs is, that they possess multiple therapeutic effects. Let me explain using a representative antitussive (*bakumondoto*). *Bakumondoto* is composed of the six crude drugs listed in Table 1 and each individual crude drug has several pharmacological effects. The result is, that apart from the antitussive main effect of *Bakumondoto* it also has enriching and moistening effects, improves gastrointestinal function, is emotionally stabilizing and has other secondary effects. Each of these effects is related to the other effects and helps to augment the main action. Precisely these multiple therapeutic effects represent the characteristic of Kampo medicines.

In the human body multiple functional systems are interrelated. If disturbances of these functional systems of the human body could be rebalanced through these Kampo medicinal actions, that might ultimately lead to a harmonization of the entire body.

Table 1 Bakumondoto Composition & Drug effects	
Galenical	Action
Ophiopogonis Tuber	antitussive (strong); enriching and moistening; mildly emotionally stabilizing
Ginseng Radix	improves digestive functions; mildly enriching and moistening
Zizyphi Fructus	improves digestive functions; mildly enriching and moistening; emotionally stabilizing
Glycyrrhizae Radix	improves digestive functions; mildly enriching and moistening
Oryzas Fructus	improves digestive functions; mildly enriching and moistening
Pinelliae Tuber	antitussive and expectorant; antiemetic
Overall action (drug effect): (1) antitussive, (2) enriching and moistening (retaining water, moistening the body), (3) improving gastrointestinal functions, (4) mildly emotionally stabilizing	

What is pediatric Kampo?

Pediatric Kampo in Japan can be defined as the use of Kampo medicines indicated for characteristic pediatric pathologic conditions. The course of its establishment is not necessarily clear, but most likely has been transmitted in ancient times from China to Japan and the accumulated experiences pertaining to the use of Kampo medicines for infants have in recent years be organized by pediatricians from a Western medical point of view. Moreover, in conjunction with the spread of extract preparations, the results of wide-ranging clinical research have helped to promote a general compilation of the relevant knowledge. A portion of it includes statistically proven evidence, but most of the material is the accumulation of experience handed down from the past that is now applied in modern clinical practice. Based on the described development of the use of Kampo medicines Chinese medical pediatrics as the field of pediatrics within the framework of traditional Chinese medicine differs slightly from the use of the Kampo medicines themselves.

Table 2 shows the characteristics of pediatric Kampo. In this context it is important to note, that in the various Asian countries there are different licenses for the practice of Western and traditional Chinese medicine, whereas in Japan both Western and Kampo medicine are unified in one medical system. The current complementary use of Kampo medicines within the Western medical clinical setting can be called an outstanding system. Next, many of the Kampo medicines originated from classic texts like the "Shan Han Lun" of the Later Han dynasty and almost all of these preparations are not used as decoctions, but rather as extract preparations. This makes fine adjustments based on individual cases difficult, but ensures a high product quality and above all makes them very convenient, easy to use in

clinical practice.

However, as described above, since pediatric Kampo includes a mixture of various different concepts like traditional Chinese medicine, accumulation of characteristic Japanese experience, Western medical evidence etc., it tends to be rather ill-defined and thus has the disadvantage of being difficult to understand.

Table 2 Characteristics of Pediatric Kampo	
1)	Before patients may be treated with Kampo, all are first assessed according to Western medicine (unified system).
2)	Almost all used preparations are extracts, most of which originate from classics based on the Shang Han Lun.
3)	Basically, preparations are matched to symptoms (formulation corresponding to a Kampo diagnosis), but they are also often matched to Western medical diagnoses.
4)	Many experiences with children have been handed down probably from the Edo period and in recent years been systematized from a Western medical point of

What is the reasoning behind the use of Kampo medicines in pediatrics?

Medical practice must necessarily be based on a solid foundation. Today it is common knowledge, that the concept of evidence-based medicine is gradually being established, where clear standards for the reliability of the practice are shown. However, regarding traditional medicine the evaluation of hundreds, sometimes thousands of years of experience still remains subject of debate. As this may be, I would like to concisely organize the reasoning behind pediatric Kampo.

1. Kampo medical reasoning

Providing bibliographically original proof in actual practice is very difficult, but mainly from the Edo period until the Showa period various Kampo physicians (groups) have used classical pediatric formulas in children and thought to have meticulously communicated a wealth of accumulated clinical experiences to us. Naturally, all this knowledge relies on the concepts of traditional medicine cultivated in China and Japan and has not been transmitted based on systematic concepts of pediatric Kampo (system). Moreover, that was a matching of formulas thought to treat basic symptoms (pattern).

On the other hand, Chinese traditional pediatrics follows the theoretical system of traditional Chinese medicine and although its theory is easily comprehensible, a treatment essentially based on the use of individual crude drugs renders its clinical application in Japan in certain cases difficult. Thus, I will restrict myself in this article to the partial introduction of those concepts.

2. Western medical reasoning (so-called EBM)

From the above follows (the in Japan handed down usage of Kampo medicines) that currently Western medical clinicians, mostly pediatricians, rely on Western medical pathology (patterns) as viewed from a Western medical point of view to

rename those pathologies and diseases and focused their attention on the correlation with corresponding formulas. In particular, since Kampo medical extracts are now covered by the insurance, a trend that became more conspicuous after 1976 and in the wake of which various results have been reported. These trends signify a reconfirmation of the tradition.

Opposed to pharmaceuticals developed intentionally with values for giant markets, Kampo medicines have statistically a relatively low chance of achieving good results, but centering on case series studies experiences with their use are steadily accumulating and attempts are made to reorganize the traditional experiences.

Frequently used formulas in pediatric Kampo and their classification according to drug effects

Taking these characteristics of pediatric Kampo into account, I will describe Kampo medicines that are convenient to use in children as viewed classified according to their drug effects from the point of view of both the Kampo medical reasoning as well as Western medical results. I am going to present the subject after performing a certain degree of integration of systematized traditional Chinese medical theory, will try to avoid Kampo medical technical terminology and describe the pediatric Kampo as simple as possible. However, Kampo contains a lot of elements that are very difficult to explain using Western medical concepts, so that I would like to ask you to bear with me regarding ambiguous theories and feelings of estrangement regarding technical terms. Also, in this article I refrained from citing passages and other detailed explanations regarding the individual preparations.

The developing pediatric physiology in ancient China was viewed as characterized by a pure yang body constitution, immature yin and yang, two excesses (heart, liver), three deficiencies (lung, spleen and kidney) and the like. Among these in particular the concept of the two excesses and three

deficiencies is important. Its modern interpretation would be as follows.

1. Easy development of fever, easy occurrence of convulsions or disturbances of consciousness
2. Easy excitability, mental instability
3. Immature gastrointestinal function, which may easily lead to decreased function
4. Immature respiratory function, which may easily lead to decreased function
5. Insufficient vital energy may easily lead to impaired growth and development.

These characteristics are even today commonly observed and can be understood without any feeling of estrangement from a Western medical point of view. In East Asia traditional medical systems tried to respond to pathological conditions corresponding to the above listed characteristics. In Japan this system was until the Meiji period Kampo. Naturally, as compared to modern medicine the therapy was extremely limited, but nevertheless a noticeable amount of therapeutic experiences accumulated and this accumulation of experiences today has been refined and allows to complement areas in pediatrics, where Western medicine is not so strong and in this way provides a useful means of maintaining the health of children. Below I will explain the actions of Kampo medicines corresponding to the 5 characteristics listed above, adding another important characteristic of Kampo medicines and try to describe representative formulas matching as far as possible the needs of pediatric primary care.

1. Easy development of fever, easy occurrence of convulsions or disturbances of consciousness
→ Kampo medicines with immunoregulatory actions
2. Easy excitability, mental instability
→ Kampo medicines with emotionally stabilizing functions
3. Immature gastrointestinal function, which may easily lead to decreased function

→ Kampo medicines with gastrointestinal improving functions

4. Immature respiratory function, which may easily lead to decreased function
→ Kampo medicines with antitussive actions, acting on the nasal cavity and paranasal sinuses
5. Easy occurrence of impaired growth and development, weak vital energy
→ Kampo medicines with growth assisting actions
6. Additional item
→ Kampo medicines acting to regulate water metabolism

1. Kampo medicines with actions to regulate immune functions

Historically infections are the most important medical topic. There is an outstanding guideline regarding the treatment of acute infections with Kampo medicines that was written approximately 2,000 years ago and even today remains an indispensable bedside reference, the "Shang Han Lun" (later Han dynasty). During the Qing dynasty a discussion of infections from a different point of view (Treatise on febrile disease = Wen Ren Lun) was also proposed. These works provide a detailed classification of the course and symptoms of infections associated with fever and used different Kampo medicines depending on the stage of the disease and the presenting symptoms.

In case of infections [the sum of all involved biologic activities of infectious agents entering the body, the corresponding biologic reaction and the acquired immunity]⁴ experimentally administered Kampo medicines may not have much outstanding direct antiviral or antibacterial actions, but their actions are considered to be mainly directed at regulating body responses (anti-inflammatory action). Almost all pediatric infections are acute with a fast progress after onset, accordingly requiring a quick and appropriate judgment. Kampo treatment of infectious diseases is very varied and complex, but

here I would like to describe only easily applicable methods under the current conditions.

First, there are various reports about the effects of *ogito* for the treatment of influenza. Primarily, it is used as a single dose during the early phase to lower the fever through sweating and should be stopped once defervescence has been achieved.

Animal experiments verified that *kakkonto*, a formula with a purpose similar to that of the aforementioned formula, has an influence on the cytokine production⁵⁾. In this context the correlation to the prevention of influenza-associated encephalopathy as a form of a cytokine storm is of interest, but there are no related reports yet.

Next, when the fever in acute infections, including influenza, is followed by lingering low-grade fever and symptoms of malaise etc., *shosaikoto* should be considered. Although there are no statistical reports, in the classics its use is commonsense and the criteria for its application are given in the classics ("Shang Han Lun").

Also, it has long been known that for infections like recurrent tonsillitis, recurrent middle ear infections that may recur several times a year either a combination of *shosaikoto* and *kikyosekkoto* or *Saikoseikanto* is beneficial. In case of recurrent tonsillitis their long-term use reportedly led in 50-80% of the cases to a marked reduction in the incidence^{6,7)}. These cases could possibly include the auto-inflammatory syndrome PFAPA (periodic fever, aphthous stomatitis, pharyngitis and adenitis syndrome). By the way, the author has used decoctions for 5 patients with PFAPA and achieved in all cases marked improvements⁸⁾. Also, perianal abscesses often recur in short intervals, making incisions necessary. In these cases *juzendaihoto* or *hainosankyuto* are very effective^{9,10)}.

Thus, if local infections and inflammations recur while no clear immune insufficiency is observed and because there is no effective Western medical pharmacotherapy, Kampo medicines are considered worth using as unique immune modulators.

(1) Regarding the acute phase

* Early stage of influenza: *maoto*, *kakkonto*

* Low-grade fever after the acute phase, malaise: *saikokeishito*

(2) For recurrent infections (in case of recurrent tonsillitis, middle ear infection, perianal abscesses etc.)

* During intermissions, when looking for stronger anti-inflammatory actions: *shosaikoto*, *saikokeishito*

* When looking for invigorating actions, expecting this to prevent secondary recurrences (as detailed below, this methods resembles utilizing gastrointestinal function improving actions): *juzendaihoto*, *hochuekkito*, *ogikenchuto*

* During exacerbations (using something with strong anti-inflammatory actions)

kikyosekkoto: in particular for upper respiratory inflammations

hainosankyuto: in particular for suppurative diseases

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