

Therapeutic effect of Sino-Japanese (Kampoh) medicine on bronchial asthma

Katsutoshi TERASAWA,*^{a)} Takashi ITOH,^{a)} Hiroyori TOSA,^{a)} Heichi SHIROISHI^{a)} and Akira IMADAYA^{b)}^{a)}Department of Sino-Japanese (Kampoh) Medicine, Toyama Medical and Pharmaceutical University Hospital^{b)}Department of Sino-Japanese Medicine, Toyama Prefectural Central Hospital

(Received March 2, 1987. Accepted May 7, 1987.)

Abstract

Effects of Sino-Japanese (Kampoh) medicine on bronchial asthma were investigated clinically. In 70 cases of bronchial asthma, Kampoh medicine was markedly effective in 33% and moderately effective in 44% of the cases. According to Swineford's classification, they were classified into 25 cases of atopic type, 18 cases of infectious type, 25 cases of mixed type and 2 cases of psychogenic type. Remission was obtained 52%, 17%, 24% and 50%, respectively. The effective Kampoh prescriptions were Ma-huang combinations and/or Bupleum combinations for the atopic type, and Ma-huang, Bupleum and/or Hoelen combinations for both the infectious and mixed types. This clinical study was not a controlled study; however, it is suggested that Kampoh medicine is one of the hopeful procedures for the treatment of bronchial asthma.

Key words bronchial asthma, kampoh medicine, traditional Chinese medicine, Syô-seiryû-tô, Saiboku-tô

Abbreviations Bupleum combinations, 柴胡劑; HKT, Hange-kôboky-tô (Ban-Xia-Huo-Pu-Tang), 半夏厚朴湯; Hoelen combinations, 茯苓劑; KBG, Keishi-bukuryô-gan (Gui-Zhi-Fu-Ling-Wan), 桂枝茯苓丸; Ma-huang combinations, 麻黃劑; SBT, Saiboku-tô (Chai-Pu-Tang), 柴朴湯; Sho, 証; SSK, Syô-saiko-tô (Xiao-Chai-Hu-Tang), 小柴胡湯; SSR, Syô-seiryû-tô (Xiao-Quing-Long-Tang), 小青竜湯; Syao-yao, 少陽; TSS, Tôki-syakuyaku-san (Dang-Gui-Shao-Yao-San), 當歸芍藥散; Yang, 陽; Yin, 陰

Introduction

Nowadays, bronchial asthma is recognized as appearing as reversible broncho-spasms due to hypersensitivity of the airways. Though rapid progress has been made in the analysis of the pathogenesis of this disease, its cause still remains unclear. The system of traditional Sino-Japanese (Kampoh) medicine is considered to offer a nonspecific therapeutic procedure against many diseases, and there have been several reports which suggested the usefulness of Kampoh treatment on bronchial asthma.¹⁻³⁾ These reports, however, cannot be subjected to modern medical evaluation in terms of their diagnostic standards. The present study was undertaken in an attempt

to clarify the importance of Kampoh medicine for the management of bronchial asthma, and to view its significance in relation to contemporary knowledge of modern Western medicine.

Subjects and Methods

Subjects : Under the criteria of bronchial asthma presented by the American Thoracic Society,⁴⁾ a total of 70 cases, who were not dependent on steroid, were investigated. Sex, age and average contraction period are listed in Table I. Sixty-three of the patients lived in Toyama Prefecture, and the other 7 cases came from other areas.

Efficacy assessment : The efficacy assessment was done in October 1985, retrospectively. The

*〒930-01 富山市杉谷 2630
富山医科薬科大学附属病院和漢診療部 寺澤捷年
2630, Sugitani, Toyama 930-01, Japan

Journal of Medical and Pharmaceutical Society for
WAKAN-YAKU 4, 65-72, 1987

Table I Descriptive statistics of 70 patients.

Type	Adults		Children		Average age	Contraction period
	M.	F.	M.	F.		
Atopic	1 *	5 *	14 *	5 *	16.0±18.0**	6.5±6.0**
Mixed	6	7	8	4	25.5±19.1	7.2±5.5
Infectious	7	9	1	1	45.6±17.8	8.8±8.7
Psychogenic	0	2	0	0	51.0± 1.4	17.0±8.5

Note : M. ; male, F. ; female, * ; number of patients, ** ; years (mean±SD).

classification of bronchial asthma was made by Swineford's classification.⁵⁾ The evaluation was made mainly through progress notes, and partly through questionnaires concerning the discontinued cases. The efficacy of Kampoh treatment was estimated by the changes of clinical severity as it is standardized by the Japan Society of Allergiology⁶⁾; a case which improved from severe grade to moderate, or from moderate grade to mild was judged as an "improved" case, and any case seen to be regressing was judged as an "aggravated" case. In this report, a case had become free from attacks for over one year and was considered to be in "remission." In the cases presenting severe attacks during the examination period, intravenous transfusion, bronchodilator, and/or cortico-steroids were used transiently. In such cases, efficacy evaluation was done through the changes both in the therapeutic and attack scores according to the Japan Society of Allergiology.⁶⁾

Protocol of management : The prescriptions adopted were selected by "Sho," a conformation based on "Yin" and "Yang" principles of traditional Kampoh medicine. Prescriptions are made up based on a manual of the hospital pharmacy of Toyama Medical and Pharmaceutical University.

The indications of representative Kampoh prescriptions which were frequently adopted in this study are as follows :

I) Ma-huang combinations

(1) Syô-seiryû-tô (SSR) : Adopted in "Yang"—weak conformation, and used to treat water-imbalance syndrome especially in the epigastric region, anhidrosis, general malaise, asthmatic dyspnoea, frothy sputum, decreased urine, rhinorrhea, and occasionally pretibial pitting edema.

(2) Makyô-kanseki-tô : Adopted in "Yang"—firm conformation, and used for treating fever due to stagnant heat in the lungs, and thirst or cough with dyspnoea.

(3) Syô-seiryû-tô-ka-kyônin-sekkô : Adopted to "Yang"—middle conformation, and used to treat a mixed type of Syô-seiryû-tô and Makyô-kanseki-tô.

(4) Eppi-ka-hange-tô : Adopted to "Yang"—firm conformation, and used for treating stridor, cough, facial edema, excessive thirst, and a tendency of decreasing urine.

(5) Kôboku-maô-tô : Adopted to "Yang"—middle conformation, and used for treating dyspnoea due to bronchial asthma. This prescription is usually used only once or twice during the attack.

(6) Keisi-ni-eppi-ittô : Adopted to "Yang"—intermediate or "Yang"—weak conformation, and used to treat asthmatic dyspnoea, decreased urine, facial edema, thirst, and occasionally hot flushes and headache.

(7) Maô-busi-saisin-tô : Adopted to "Yin"—weak conformation, and used for the symptoms of chillphobia, cough and sputum, sore throat, mild fever, submerged and thin pulse, general lassitude, weakness, and somnolence.

II) Bupleum combinations

(1) Syô-saiko-tô (SSK) : Adopted to "Yang"—firm conformation, and mainly given to patients with thoraco-costal distress and abdominal distension. It generally improves the physical constitution. A red tongue with thick fur, nausea, sticky saliva, and tense pulse are indicative signs of this prescription.

(2) Saiko-keisi-tô : Adopted to "Yang"—weak or "Yang"—intermediate conformation, and effective for persons with a somewhat delicate

constitution who have a tendency to become fatigued; also for gastrointestinal weakness, headaches, heaviness in the head, fever, anorexia, and nausea. Signs such as tenseness around the rectus abdominus muscles, floating and weak pulse, as well as sweaty skin are also indicative for this prescription.

(3) Saiko - keisi - kankyô - tō : Adopted to "Yang"—weak conformation, and used for persons with a delicate constitution who have alternating chills and fever, chest distension, mild stagnancy and irritation, decreased urine, thirst, sweating of the head, heart palpitation, cold hands and feet, and short stool or diarrhea. Slight thoraco-costal distress, and prominent pulsation of the abdominal aorta are also indicative signs of this prescription.

(4) Dai-saiko-tō : Adopted to "Yang"—firm conformation, and used to treat abdominal distress, thoraco-costal distension, chest distension and constipation. Anorexia, nausea, and a stiff neck are also signs which warrant this prescription.

(5) Saiko-ka-ryûkotu-borei-tō : Adopted to "Yang"—firm conformation. It is indicated for distension in the chest and epigastrium, decreased urine, constipation, insomnia, and mental instability. Thoraco-costal distension, prominent pulsation of the abdominal aorta, and tense radial pulse are also indications for which this prescription is given.

(6) Sigyaku-san : Adopted to "Yang"—intermediate conformation, and used for persons with a delicate constitution who have thoraco-costal distention, tense abdominal rectus muscles, cold hands and feet, and mental instability.

III) Hoelen combinations

(1) Bukuryô-kyônin-kanzô-tô : Adopted to "Yang"—intermediate conformation, and used for persons with dyspnoea and chest distension who have prominent epigastric resistance and weak pulse.

(2) Bukuryô-sigyaku-tô : Adopted to "Yin"—weak conformation, and used for treating chills, diarrhea, abdominal distension, cold hands and feet, anemia, palpitation, anxiety, edema and decreased urine. Weak pulse, pale face color, and

exhaustion of vital energy are also symptoms for which this prescription is given.

(3) Ryôkan-kyômi-singenin-tô : Adopted to "Yin"—intermediate or "Yin"—weak conformation, and used for treating stridor, cough, dropsy, hot flushes, and cold feet. It is also administered for weak pulse, prominent pulsation of the abdominal aorta, and splashing sound around the epigastrium.

(4) Keisi-bukuryô-gan (KBG) : Adopted to "Yang"—firm conformation with "Oketsu" syndrome.

(5) Tôki-syakuyaku-san : Adopted to "Yin"—weak constitution with "Oketsu" syndrome, and is taken for respiratory disorders with chills near the waist and in the feet.

IV) Others

(1) Mokubôi-tô : Adopted to "Yang"—firm conformation, and used for treating asthma, palpitations, and prominent resistance around the epigastrium. Edematous face, pretibial pitting edema, a submerged and tight pulse, and dysuria are also indicative signs of this prescription.

(2) Kanzô-kankyô-tô : Adopted to "Yin"—weak conformation, and used for persons with delicate constitution who have dyspnoea, cough, cold arms and feet, dryness of the mouth, and hiccups. Frequent urination, thin saliva, watery sputum, and weak pulse are also essential indications of this prescription.

(3) Sôsi-kôki-tô : Adopted to "Yang"—weak conformation, and used for persons with delicate constitution who have cough, dyspnoea, hot flushes and sweating of the head. Weak pulse, splashing sound around the epigastrium, cold feet, and anxiety also call for this prescription.

(4) Hange-kôboku-tô (HKT) : Adopted to "Yang"—weak or intermediate conformation, and is taken for a moist and harsh cough with a scratchy throat and for a sore throat.

Results

Assessment by severity of the attacks

The efficacy of Kampoh treatment on bronchial asthma based on the severity of the attacks is listed in Table II. The results show that

Table II Effects of Kampoh treatment on various types of attacks.

Severity	Type	N.	No-At.**	Mild**	Sev.**	Mrk-Sev.**
%						
Markedly	Px.	10	30	30	30	10
Severe*	Chr.	13	8	23	38	31
Moderately	Px.	31	42	42	16	0
Severe*	Chr.	9	33	44	22	0
Mild*	Px.	6	50	50	0	0
	Chr.	1	0	100	0	0

Note : Changes in severity of each patient before*vs. after** the treatment.

N. : Number of patients, No-At. : no-attack, Sev. : Severe, Mrk-Sev. : markedly severe, Px. : paroxysmal type, Chr. : chronic type.

Kampoh medicine is more effective in moderately severe than markedly severe cases. Concerning the character of attacks, Kampoh medicine was more effective in the paroxysmal type than the chronic type, and this tendency was more obvious in the markedly severe cases.

Assessment by the type of bronchial asthma

As shown in Table III, the atopic type (25 cases) showed 52% "remission" and 28% "improvement." Concerning the "remission" cases, 9 of 13 cases of this group consisted of the moderately severe cases at the starting point of the Kampoh treatment. However, in the infectious type, "remission" and "improvement" were ob-

tained in 17% and 50% of the cases, respectively. The efficacy of the cases of the mixed type showed 24% "remission" and 56% "improvement." The "remission" cases of this type consisted of moderately severe cases at the starting point of the treatment. The psychogenic type were only two cases ; however, both of them were classified as markedly severe at the starting point, and one of them showed "remission."

Assessment by age and sex

In order to estimate the efficacy of the Kampoh treatment on bronchial asthma by age and sex, the patients were divided as adults and children of both sexes. The results (Table IV) showed that there were more markedly severe adult cases, and "remission" was obtained in both sexes of children, and in females in adult cases. However, the total of both "remission" and "improvement" showed no significant differences between both sex or age.

Assessment by levels of serum IgE

As shown in Table V, there were no correlations between the levels of serum IgE and efficacy of Kampoh treatment.

Table III Effects of Kampoh treatment in various types of asthma.

Type	N.	Remission	Improvement	No-change
(%)				
Atopic	25	52	28	20
Mixed	25	24	56	20
Infectious	18	17	50	33
Psychogenic	2	50	50	0

Note : N. : number of patients.

Table IV Effects of Kampoh treatment both by age and sex.

	Sex	N.	Med. Prd.	Rem.	Imp.	No-change
			(month)	(%)		
Adults	M.	14	34.7±18.9	0	71	29
	F.	23	29.3±17.5	39	43	17
Children	M.	23	23.8±17.2	43	35	22
	F.	10	26.8±18.4	40	30	30

Note : M. : male, F. : female, N : number of patients, Med. Prd. : medication period (mean±SD), Rem. : remission, Imp. : improvement.

Table V Effects of Kampoh treatment by serum IgE levels.

IgE Value (U/ml)	N.	Remission	Improvement	No-change
		(%)		
0—300	20	20	55	20
301—700	16	44	44	12
701—	21	29	43	29

Note : IgE value was measured by RIST, N. : number of patients.

Table VI Effective Kampoh prescriptions by types of asthma.

Prescription	Types of asthma			
	Atopic	Mixed	Infect.	Psy.
Ma-huang combinations	13*(5)	13 (3)	6 (3)	2
Bupleum combinations	11 (5)	12 (2)	5	1
Hoelen combinations	3 (2)	5 (3)	6 (4)	0
Mokubōi-tō	0	1 (1)	2 (2)	0
others	2	2	2	1

Note : Infect. : infectious type, Psy. : psychogenic type, * : number of effective cases, () : number of usage alone.

Table VII Details of Ma-huang combinations in effective cases.

Ma-huang combinations	Atopic	Mixed	Infect.	Rsy.
Syō-seiryū-tō (SSR)	6*(2)	5	1	0
SSR-ka-kyōnin-sekko	5 (2)	4 (2)	2	0
Makyō-kanseki-tō	1	2	1	0
Maō-busi-saisin-tō	0	1	1 (1)	1
Kōboku-maō-tō	0	1 (1)	1 (1)	0
Eppi-ka-hange-tō	1 (1)	0	1 (1)	0
Keisi-ni-eppi-ittō	1 (1)	0	0	1

Note : Abbreviations are same as Table VI.

Table VIII Details of Bupleum combinations in effective cases.

Bupleum combinations	Atopic	Mixed	Infect.	Psy.
Saiko-keisi-tō	8*(2)	4 (1)	1	0
Syō-saiko-tō	1 (1)	4 (1)	1	0
Saiko-keisi-kankyō-tō	2 (1)	1 (1)	1	0
Dai-saiko-tō	1	1	1	1
Sigyaku-san	0	1	0	0

Note : Abbreviations are same as Table VI.

Correlation between type of asthma and its effective Kampoh prescriptions

Correlation between asthma type and effective Kampoh prescription was analyzed in this study. The results are listed in Table VI. The data indicate that Ma-huang and/or Bupleum combinations are effective for all types of asthma.

However, Hoelen combinations have tended to be effective only for the infectious and mixed types.

The details of efficacy of the Ma-huang combinations in the different types of asthma are listed in Table VII. Syō-seiryū-tō (SYO) and Syō-seiryū-ka-kyōnin-sekkō-tō (SKS) are most frequently effective both in the atopic and mixed

Table IX Effects of Kampoh treatment by combined usage of Ma-huang and Bupleum combinations.

Severity	Mode of Med.	Rem.	Imp.	No-change
Markedly	Bupl. alone	0*	1 (1)	2
Severe	Ma-huang. alone	0	2	1
	Combined	2	3	0
Moderately	Bupl. alone	6	0	2
Severe	Ma-huang. alone	0	5	1
	Combined	8	9 (1)	2
Mild	Bupl. alone	0	1	1
	Ma-huang. alone	2	0	3

Note : Mode of Med. ; mode of medication, Rem. ; remission, Imp. ; improvement, Bupl. ; Bupleum combination, Ma-huang. ; Ma-huang combination, * ; number of effective cases, (), combined usage with Hange-kôboku-tô.

types of asthma.

In Table VIII, details of the efficacy of Bupleum combinations in the different types of asthma are listed. Saiko-keisi-tô (SKT) is most frequently effective in the atopic type, while in the mixed type, both SKT and Syô-saiko-tô (SSK) are frequently useful together.

The effects of combined application of Ma-huang combinations and Bupleum combinations are listed in Table IX. As shown in this table, ten cases of "remission" were attained by their combined application in both markedly and moderately severe cases.

Meanwhile, six cases of "remission" were also obtained by the Bupleum combination alone in moderately affected cases. Also, two cases of "remission" were achieved by the Ma-huang combination alone in mildly affected cases.

Safety assessment of Kampoh treatment

The haematological data, blood chemistry, and renal function during the test period showed no significant aggravation in such parameters as S-GOT, S-GPT, LDH, alkaline phosphatase, choline esterase, BUN, creatinine, RBC counts, haemoglobin values and WBC counts.

Discussion

Efficacy evaluation of Kampoh medicine on bronchial asthma

The prognosis of medical treatment on bronchial asthma differs between child and adult cases. Using Western medicine with children,

Nakayama⁷⁾ reported that approximately 50% of the cases recovered completely by the age of 20 ; another 35% of the cases reached that age with mild asthma attacks, and the remaining 15% still had severe attacks disturbing their ordinary life when they attained adulthood.

By Western style medical procedures, Bandoh⁸⁾ reported on the prognosis of adult cases who consulted his clinic regularly. In the report, he described that 28% of his cases had improved, 55% had remained unchanged, and 17% had become aggravated. Mitsui, also with Western medicine,⁹⁾ has investigated 223 patients who had received his treatment for 3 to 13 years, and had then discontinued his medication for over 3 years. The number of cases with complete remission was 18.5%. Figures for improvement, "no change," and aggravation including death were 34.3%, 37.8%, and 4.7% respectively.

Concerning the clinical effectiveness of Kampoh medicine, Hosono²⁾ investigated 252 cases who had been receiving medication. In their report, the number of cases showing remission, marked improvement, improvement, "no change," and aggravation were 21.5%, 24%, 46.5%, 8.0%, and 1.0%, respectively. Fujihira¹⁾ has reported on 16 cases who had had Kampoh medicine and had then left this medication for over two years. In the report, he described that the number of remission, improvement, and "no change" were 12.5%, 37.5%, 18.8%, and 31.3%, respectively. Ogura³⁾ reported in 44 cases that the number of remission, improvement, "no change," and aggra-

vation were 38.7%, 54.6%, 4.5%, and 2.2%, respectively. He included in the treatment not only Kampoh medicine but physical exercise and diet as well, which he insisted to be of great importance.

In the present investigation, the percentages of remission, improvement, "no change," and aggravation were 33%, 44%, 23%, and 0% of 70 cases, respectively. The results were considerably better than those of the other reports. However, some qualifying factors need to be mentioned:

- (1) The subjects analyzed here consisted only of steroid non-dependent cases.
- (2) The observation periods were rather short (at most 5.5 years).
- (3) Over half of the cases are still taking medication.
- (4) The subjects include children.

However, as shown in Table I, the average duration of illness was rather long, and the subjects had not been able to achieve improvement in other clinics prior to entering our protocol. Consequently, the results obtained in this investigation indicate that Kampoh medicine can be considered to be a useful medical procedure in the treatment of bronchial asthma.

Correlation between type of asthma and Kampoh prescriptions

The results obtained in this study have revealed that most effective Kampoh prescriptions consist of Ma-huang combinations and Bupleum combinations. Concerning the Ma-huang combinations, Syô-seiryû-tô (SSR) and its variants are effective both in the atopic and mixed types of asthma. Further, these potions are more effective in younger patients. Hosono²⁾ has reported a positive effect of SSR in 62 of 252 cases, while Fujihira¹⁾ described that SSR was effective in only 2 of 36 cases. With children, Morishima¹⁰⁾ and Koga¹¹⁾ reported that approximately 40% to 65% of their cases achieved improvement, in which case SSR was adopted regardless of the "Sho" of Kampoh medicine. The results of our investigation indicate that 23 of the 52 cases treated effectively had been pre-

scribed SSR. However, only 6 cases improved by using SSR solely, and combined usage with other Kampoh prescriptions were more common.

Throughout the present investigation, it was apparent that Bupleum combinations such as Syô-saiko-tô (SSK) or Saiko-keisi-tô (SKT) were also effective in children and young adults. Odajima¹²⁾ has reported that in 143 child cases, 60% improved with Saiboku-tô (SBT). In adult cases, Kurihara¹³⁾ has described that 62% of their cases showed improvement after SBT administration for over one year. Concerning this SBT, it is a combination of SSK and Hange-kôboku-tô (HKT), which is said to improve "Shao-yang" stage of disease associated with obstruction of Ch'i (vital energy) around the throat and chest. So it appears to be advantageous in the treatment of asthma.

However, in our subjects only 2 cases were treated with this prescription. This discrepancy is caused by a different estimation of the "Oketsu" syndrome¹⁴⁾ that frequently coexists with bronchial asthma. In other words, we usually do not use HKT but rather anti-"oketsu" prescriptions such as Keisi-bukuryô-gan or Tôki-syakuyaku-san with Bupleum combinations.

Combined application of Ma-huang and Bupleum combinations were frequently adopted in our study, and this style of medication is thought to be essential for severe cases. Yamada¹⁵⁾ has reported on the Kampoh treatment of bronchial asthma that there are two ways to approach this disease: symptomatic and constitutional approaches. For the symptomatic approach, Ma-huang combinations are more effective, and for the constitutional approach, meaning improvement of a delicate constitution, Bupleum combinations are more useful. Our results are essentially in agreement with Yamada's conclusions.

Bronchial asthma and the concept of "Sho" in Kampoh medicine

Tomioka¹⁶⁾ has reported on bronchial asthmatics who were treated with several randomly adopted Kampoh prescriptions. In that study, he described that the recognition of an indicative symptom complex for the perscription ("Sho") is essential for obtaining good results. The present

study is also based on the concept of "Sho," and the data obtained appear superior to those of other reports.^{11,12)} However, the details of "Sho" in the treatment of bronchial asthma still remain unclear, because traditional Kampoh medicine is based on the "Yin and Yang" principles. In other words, the complete and concrete translation of Kampoh medicine to Western medicine is very difficult. But the authors are quite optimistic about this problem, because the gradual accumulation of more definitive parameters, retrospective analyses of cases, as well as future controlled studies based on the concept of "Sho" will surely help to integrate these two medicinal systems.

Acknowledgements

We express our gratitude to Mr. A. Gerz for his critical reading of this manuscript. This investigation was supported by Grant-in-Aid for scientific research No. 59570968, the Ministry of Education, Science and Culture of Japan, and by a research fund from Tsumura Juntendo Co., Ltd., Tokyo, Japan.

和文抄録

気管支喘息に対する漢方治療の効果を臨床的に検討した。70症例における効果は著効33%, 有効44%であった。Swinefordの分類に従って対象例の内訳をみるとアトピー型25例, 感染型18例, 混合型25例, 心因型2例であった。各病型における寛解率はそれぞれ52%, 17%, 24%と50%であった。効果を示した漢方方剤はアトピー型に対しては麻黄剤と柴胡剤であり, 感染型と混合型に対しては麻黄剤, 柴胡剤, 茯苓剤であった。本臨床研究はコントロールを置いた研究ではないが, 漢方治療が気管支喘息の治療手段として有望なものであることが示唆された。

References

- 1) Fujihira, K. : Treatment of bronchial asthma by using Kampoh medicine. *Nippon Toyo Igaku Kaishi/Jap. J. Orient. Med.* **17**, 34-38, 1966
- 2) Hosono, H. : Treatment of bronchial asthma in Seiko-en Clinic. *Nippon Toyo Igaku Kaishi/Jap. J. Orient. Med.* **17**, 40-51, 1966
- 3) Ogura, S. : Treatment of bronchial asthma with Oriental medicine, diet and exercise prescription. *Nippon Toyo Igaku Kaishi/Jap. J. Orient. Med.* **27**, 171-173, 1978
- 4) Rackmann, F.M. : Working classification of asthma. *Amer. J. Med.* **30**, 601-606, 1974
- 5) Swineford, O. : Classification of causes. A recommended classification and a critical review. *J. Allergy* **24**, 151-167, 1953
- 6) Yamamura, Y. *et al.* : On the arrangements of the committee : clinical assessment for severity of bronchial asthma. *Allergy* **33**, 1186-1199, 1984
- 7) Nakayama, Y. : Prognosis of bronchial asthma in children. *Shyoni Rinsho* **22**, 410-415, 1969
- 8) Bandoh, T. : Prognosis of bronchial asthma. *Nippon Kyobushikkan-gaku Zasshi* **38**, 719-724, 1979
- 9) Mitsui, S. : Prognosis of bronchial asthma. In "Allergy Clinic," Kanahara Shuppan, Tokyo, pp. 325-342, 1979
- 10) Morishima, A. : Treatment of bronchial asthma in children by using Syo-seiryu-to. *Shonika Rinsho* **41**, 229-238, 1978
- 11) Koga, M. : Treatment of bronchial asthma in children by using Syo-seiryu-to. *Shonika Rinsho* **32**, 1861-1868, 1979
- 12) Odajima, H. : Clinical effects of Saiboku-to on bronchial asthma in children. *Shoni Naika* **16**, 29-32, 1984
- 13) Kurihara, M., Nakano, H. *et al.* : Clinical assessment of long-term administration of Saoboku-to in bronchial asthma. *Shindan To Chiryō* **73**, 2283-2285, 1985
- 14) Terasawa, K. and Kumagai, A. : Kampoh medicine for the treatment of bronchial asthma. *Pharma Medica*, Supple. 67-72, 1985
- 15) Yamada, T. : Bronchial asthma. In "Kampoh Igaku (III)," Nippon Kampoh Igaku Kenkyu-jo, Tokyo, pp. 33-35, 1980
- 16) Tomioka, S., Nemoto, T., Nakasawa, T., Hueki, R. and Matsumura, M. : Objective assessment of "sho" in traditional Kampoh medicine. *Rinsho To Kenkyu* **59**, 3659-3664, 1982