

Original article

Survey of recognition and utilization of guidelines for the diagnosis and management of bronchial asthma in Japan

Background: In Japan in 1993, the Japanese Society of Allergology (JSA) developed guidelines for diagnosis and management of asthma (JGL), which were based on the concept that asthma is a chronic inflammatory disorder of the airway.

Methods: This survey study was intended to investigate the recognition and utilization of JGL among physicians who had treated asthma. The survey comprised two methods: a quantitative mail survey and a qualitative door-to-door survey conducted by trained interviewers.

Results: In the mail survey, a total of 1028 physicians responded; 552 members of the JSA and 476 nonmembers. Ninety-four percent of JSA members were aware of adult asthma management guidelines, while 53% of nonmembers were aware of them. Although approximately half of the physicians, both members and nonmembers, found differences between the asthma management policies in JGL and their previous policies, most of them utilized JGL once they read it. In the qualitative door-to-door survey, 80–90% of physicians evaluated JGL as good after they read it.

Conclusions: JGL was recognized and utilized by most JSA members, but only half of nonmember physicians were aware of JGL, although they utilized JGL after they read it. Further action to implement JGL among nonspecialist physicians is needed to improve management of asthma.

S. Makino

Tokyo Allergic Disease Research Institute

T. Miyamoto

Japanese Society of Allergology

S. Nakajima

University of Kinki

J. Kabe

Yugawara Kosei-nenkin Hospital

M. Baba

Doai Kinen Hospital

H. Mikawa

Kansai Denryoku Hospital

M. Furusho

University of Kyoto

K. Fukuda

University of Dokkyo

T. Nakagawa

University of Saint Marianna

H. Naitou

Astra Japan Ltd, Japan

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Dr S. Makino
Dokkyo University School of Medicine
880 Kitakobayashi
Mibu
Shimotsuga-gun
Tochigi 321-0204
Japan

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During the past 30 years, the prevalence of asthma in Japan has increased, although the mortality rate of the disease has remained constant (1).

Recent studies have shown that asthma is a chronic inflammatory disease of the airway associated with

airway hyperresponsiveness and episodes of airway narrowing (2). In addition to bronchodilating agents, anti-inflammatory agents, including inhaled corticosteroids, inhaled and oral antiallergic agents, and slow-release theophylline, have been considered to control

Table 1. Four steps for maintenance of long-term drug therapy for control of adult asthma

Steps	Severity of asthma	Drugs*
1	Mild	Consider inhaled steroids at low dose, or antiallergic drugs
2	Moderate	Inhaled steroids, BDP 200–400 µg/day Antiallergic drugs (ICMR, LT/Tx inhibitors) Sustained-release theophylline Long-acting β_2 -agonists
3	Moderate	Inhaled steroids, BDP 400–800–1200 µg/day Antiallergic drugs (ICMR, LT/Tx inhibitors) Sustained-release theophylline Long-acting β_2 -agonists, anticholinergic drugs
4	Severe	Inhaled steroids, BDP 800–1200–1600 µg/day Oral steroids Sustained-release theophylline Long-acting β_2 -agonists

*Inhaled short-acting β_2 -agonists may be given up to 3 or 4 times per day for acute bronchoconstriction in any of steps.

BDP: beclomethasone dipropionate.

ICMR: inhibitor of chemical mediator release.

LT/Tx: leukotriene/thromboxane A_2 .

airway inflammation (3). With this information in mind, the Japanese Society of Allergology (JSA) held a symposium in 1993 on guidelines for the treatment of atopic diseases including adult asthma, childhood asthma, allergic rhinitis, and atopic dermatitis. The proceedings of this symposium were published and distributed widely. In 1995, a revised edition of these guidelines was published. A stepwise approach to drug therapies for long-term control of adult asthma according to the JSA guidelines for the diagnosis and management of bronchial asthma (JGL) is shown in Table 1. The definition of severity of asthma and the use of antiasthma agents are essentially the same as those of the Global Initiative for Asthma, except for the following two differences:

- 1) antiallergic agents or low-dose inhaled corticosteroids can be considered in mild intermittent asthma if inflammation of the airway is suggested by the presence of blood or sputum eosinophilia
- 2) oral antiallergic agents, including H_1 -antagonists, chemical mediator-release inhibitors, and leukotriene/thromboxane A_2 inhibitors, are recommended to be used in moderate asthma when these agents improve symptoms (4–7).

This survey was intended to investigate the degree of recognition and utilization of the JGL among the members of the JSA (internists and pediatricians) in comparison to nonmembers. In this report, we describe the results, focusing on adult asthma in the JGL.

Material and methods

Survey methods

The recognition, acceptableness, and utilization of the JGL were surveyed among physicians who diagnosed

bronchial asthma by both qualitative survey (door-to-door interview) and quantitative survey (mail survey) from July 1996 to late January 1997.

Quantitative mail survey (MS). The subjects were selected from among internists, respiratory specialists, and pediatricians who were either members or not members of the JSA. Questionnaires concerning the acceptableness and utilization of the JGL were mailed to prospective responders, who were asked to complete the questionnaire and return it by mail. Each of the questions in these questionnaires is shown below, along with the corresponding responses.

Qualitative door-to-door survey (DDS). Ten well-trained interviewers (nonmedical) visited physicians after confirming both their willingness to participate in this survey, and their having diagnosed asthma. The subjects were randomly selected from among the members of the JSA and nonmembers, including internists, respiratory specialists, and pediatricians. During the first visit, recognition of the JGL was examined, and copies of the JGL were left with the physicians for the next visit. During the second visit, information regarding recognition, acceptance, and utilization of the JGL was gathered both by formulized questions and by recording physicians' comments.

Subjects for survey and participation rate

The rate of participation in the qualitative DDS was 78%, while the rate in the quantitative MS was 37%. In February 1997, 285 physicians of the JSA were asked by DDS whether they had treated asthma, and 235 of them replied "yes". Then, 183 (78%) of these physicians agreed to participate in the DDS. For the MS, 2800

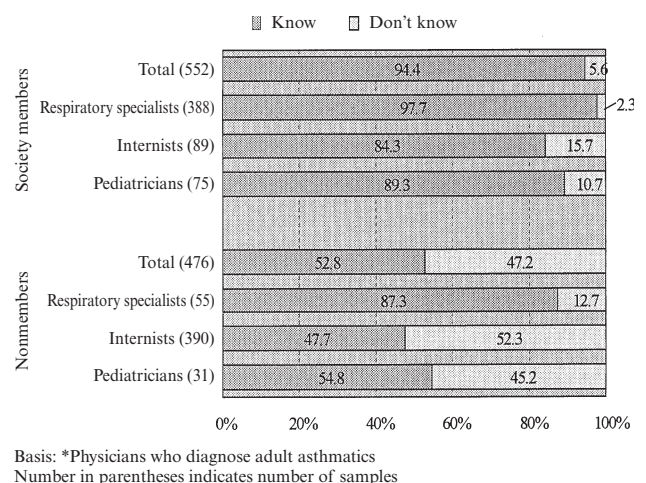


Figure 1. Rate of recognition of JGL for diagnosis and management of bronchial asthma for adult asthma patients.

physicians were mailed questionnaires at random. Prospective responders were asked to complete the questionnaires and return them by mail if they had diagnosed asthma. Physicians who had not diagnosed asthma were not included in either survey. A total of 1028 physicians (37%) responded to the questionnaires; 552 were members of the JSA, including 388 respiratory specialists, 89 internists, and 75 pediatricians. A total of 476 were not members of the JSA, including 55 respiratory specialists, 390 internists, and 31 pediatricians.

Results

Part I. Quantitative MS – recognition and utilization of the JGL

The following results are based on the 1028 responses to the questionnaires sent by mail.

Recognition of the JGL. Q. “Do you know of the JGL prepared by the JSA?”

Ninety-four percent of the 552 JSA members who did diagnose asthma were aware of the JGL, but only 52.8% of the 476 nonmembers were aware of it (Fig. 1).

First impression of the JGL. Q. “When you read the JGL for the first time, how much difference did you notice from your own previous diagnosis and treatment policies?”

Exactly 45.3% of JSA members and 56.8% of nonmembers who read the JGL found a difference between the guidelines and their previous policies (Fig. 2).

Utilization of the JGL. Q. “Have you used the JGL as a reference in your diagnosis and treatment of asthma?”

A total of 83.2% of JSA members who were aware of the JGL used it; similarly, 83.6% of JSA nonmembers used it (Fig. 3).

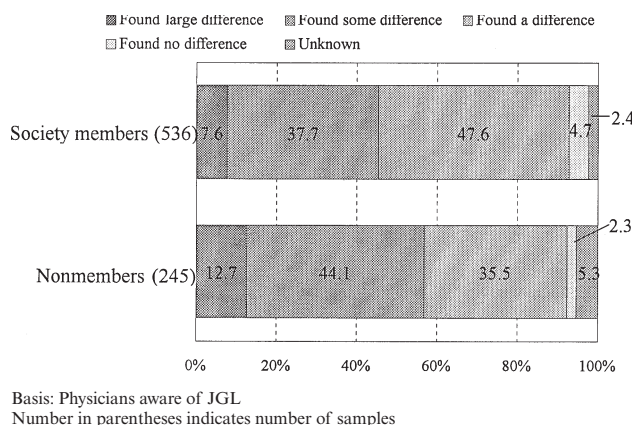


Figure 2. Impression when first reading JGL among JSA members and nonmembers.

Information sources on asthma management among JGL readers. Q. “What kind of information do you consider to be basic to your current diagnosis and treatment policy for asthma?”

Among physicians who had read the JGL, the JGL itself and medical journals were the major basis of diagnosis and treatment policies. Reports from the JSA meeting were also important for JSA members (Fig. 4).

Part II. Qualitative DDS – evaluation of the JGL

The following results are based on the responses of the 127 physicians who were visited by interviewers. The physicians were given information on the JGL 1–2 weeks before the visits. Interviewers solicited comments on the ease of reading, ease of understanding, amount of information, appropriateness of information, clinical usefulness, and overall evaluation.

For each of the items, physicians were asked to give their opinions as 1) quite good, 2) good, 3) not very good, 4) not good at all, and 5) unknown.

Overall evaluation. Of the interviewed physicians, 75–91% judged the JGL to be quite good or good. The overall rate of evaluation of the JGL as “good” was 81.7% among JSA members and 92.8% among nonmembers. It seems that JSA members were more critical of the guidelines.

Evaluation points and problems in the JGL. Interviewers asked the physicians to comment freely on the JGL, and their comments were recorded and categorized as from three to seven evaluation points or problems.

The major evaluation points were establishment of the guidelines themselves and standardization of treatment methods. Secondly, introduction of inhaled corticosteroids in severity-dependent treatment systems and the use of peak flow measurement for evaluation of asthma severity were suggested (Table 2).

Concerning problems with the guidelines, the contents and design of the guidelines were not easy to discern, and more compact guidelines for nonspecialists and generalists were suggested. Other problems were a lack of clarity regarding the safety of inhaled corticosteroids and the efficacy of antiallergic drugs, and the regulation of their use according to the severity of the asthma (Table 3).

Discussion

In this survey, we found in the mail survey that 94% of JSA members who diagnosed asthma were aware of the guidelines, but only 52% of nonmembers were aware of them. Although almost half of JSA member and nonmember physicians who read the guidelines found differences from their previous policies, once they had

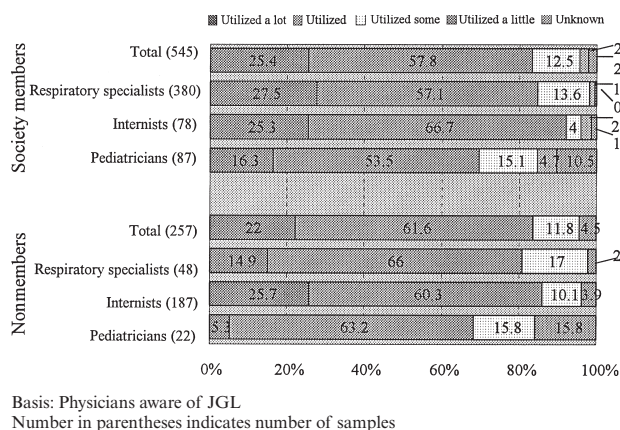


Figure 3. Utilization in diagnosis and treatment of JGL among JSA members and nonmembers.

read the JGL, most of them began using it in their treatment of asthma.

These observations show that the guidelines are acceptable to most physicians and can be used for asthma management. In the DDS, we found a similar but slightly more favorable response to the guidelines. Confirming this observation, Tsukioka et al. carried out a mail survey in 1994 of JSA member internists and pediatricians, and found that 95% of responders thought the guidelines given in 1993 were acceptable (3). Major problems reported in this survey were the need for a simpler version for nonspecialists or for desk use, concern regarding the dose of inhaled corticosteroids and their safety, and definition of the place of antiallergic agents. The comments from the DDS should be useful for the next revision of the guidelines.

Implementation and effects of the JGL

Since the publication of the JGL in 1993 and the Global Initiative for Asthma (GINA) in 1995, many of the surveys on the control of asthma at clinics with asthma specialists have shown that the number of hospital admissions and the frequency of emergency room visits due to asthma exacerbation have decreased drastically, although the total number of asthma patients remained the same in outpatient clinics (8–11). Fueki et al. (8, 9) carried out a mail survey of their asthma patients, asking about the frequency of hospital and emergency room visits due to asthma exacerbation, and reported the replies of 205 patients. The frequency of hospitalization and emergency room visits decreased by 70% in 1997 as compared to 1993–4, while the percentage of patients using inhaled corticosteroids increased from 43% to 52% during the same period. They also carried out a mail survey of physicians, internists, and pediatricians (all JSA-authorized specialists) to determine differences in the management of asthma between 5 years ago and the present. The most common response was that the management of asthma had

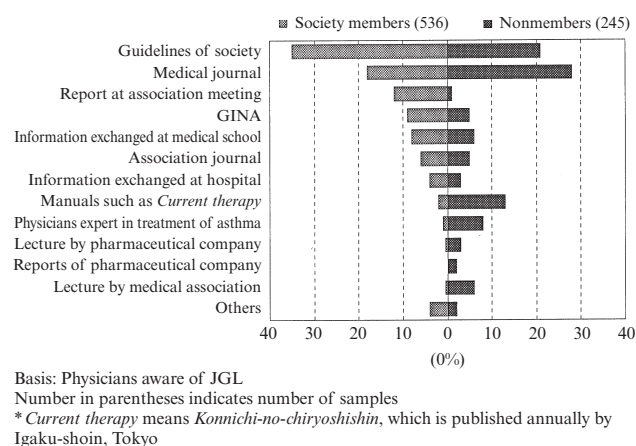


Figure 4. Basic information for diagnosis and treatment policies for adult asthma among JSA members and nonmembers.

improved. The major reasons for this answer were reported to be the development of the JGL, wider use of inhaled corticosteroids, and peak-flow monitoring. Ishihara (10) and Koshino (11) also reported improvement of asthma management after the development of asthma management guidelines and introduction of inhaled corticosteroids.

In accord with this view, there are many reports on the implementation of asthma management guidelines in the USA and Europe. Noncompliance with asthma management guidelines was shown to be associated with increased morbidity and costs for asthma-related care. Surveys of generalists have shown that treatment and diagnostic procedures were insufficient compared to published asthma management guidelines (including GINA), showing that the treatment procedures given in the guidelines would be made widely known (12–14). Other studies also report that compliance with asthma management guidelines has improved the control of asthma (15–21).

These reports in Japan and other countries show that utilization of asthma management guidelines improves asthma management, and their implementation among general practitioners is critical to improve quality of life among asthma patients in general. However, it should be noted that patients whose asthma is still not well controlled by the conventional therapy of the JGL

Table 2. Evaluation points for JGL from 94 physicians who read guidelines

Establishment of guidelines themselves (for guidance and evaluation of treatment)	27.4%
Introduction of inhaled steroids treatment	20.2%
Stepwise approach to drug therapy by severity of asthma	10.7%
Use of peak flow value as index	10.7%
Standardization of treatment methods	9.5%
Wide choices for method of treatments	4.8%
Instruction on method of drug use	3.6%

Basis: 94 physicians who read adult JGL.

Table 3. Problems with JGL from 94 physicians who read guidelines

Guidelines themselves: (guidelines should be divided into two volumes [specialists and nonspecialists], design and layout are not easy to understand, more compact size for use in emergencies, etc.)	22.2%
Stepwise drug therapy: (not suitable for nonspecialists or general practitioners, concrete clinical cases and method for gradual reduction of steroid use by steroid-dependent patients must be devised, etc.)	20.4%
Safety of inhaled steroids: (safety in large doses and long-term use, risk of steroid dependency, no clear definition of adverse reactions by severity, etc.)	16.7%
Use of inhaled steroids: (recommended dose is insufficient, appropriate dose in Japan has not been determined, etc.)	16.7%
Regulation of oral antiallergic drugs: (assessment of efficacy is necessary, differences in use according to severity have not been determined, etc.)	14.8%

Basis: 94 physicians who read adult JGL.

should be referred to specialists for further evaluation of management plans.

Future tasks

This survey has generated many suggestions of tasks to be carried out in the near future, including:

- 1) Making the asthma management guidelines widely known among internists and pediatricians, especially nonmembers of the JSA. For this purpose, the preparation of a concise handbook for desk use which includes both adult and childhood asthma management is needed.
- 2) Assisting asthma patients and their families by providing practical methods for self-management, and information for their deeper understanding of the disease. At present, a practical guide to drug

inhalation and for the measurement of PEF is needed.

- 3) The promotion of research, both clinical and basic, to provide information for further progress in asthma management and to investigate the efficacy of long-term administration of anti-inflammatory agents (including inhaled corticosteroids).

These points should be clarified to ensure progress in the care of asthma patients. Finally, asthma management guidelines should be re-evaluated regularly, and revised versions should be published regularly and frequently.

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