



Fig. 2 Percentage of physicians prescribing each type of drug for each vignette in the 3 groups by ear, nose, and throat specialists (ENTs), general physicians (GPs), and internal medicine doctors (IMs). The black circles indicate the simple percentages. The two-tailed bars represent the 95% confidence intervals of the percentages. The one-sided bars represent the 97.5% confidence intervals of the percentages. **A:** Second-generation antihistamines. **B:** Intranasal corticosteroids. **C:** Antiallergic eye drops.

DISCUSSION

In this study we analyzed and compared for the first time the prescription patterns of drugs for cedar pollinosis between physicians classified as ENTs, who are specialists, and GPs and IMs through the use of clinical vignettes.

The research purpose for using clinical vignettes was not to test the knowledge of physicians, but to analyze how the physicians would prescribe medication if they encountered such patients in real life as described by the vignettes. Because responses are likely to be biased in many ways, it is important to analyze the responses given by a strictly defined group of physicians rather than that of individuals.¹³ Recent studies have confirmed the validity of clinical vignettes by comparing them with simulated patient studies. Clinical vignettes are advantageous in that they are more cost effective and practical compared to simulated patients, and most of all, the problem of case-mix that occurs during medical record reviews can be regulated.¹²

In Japan, many cedar pollinosis patients consult otolaryngologists and general physicians. According to past research conducted on the trend of medical consultation for cedar pollinosis patients, 40% consulted otolaryngologists and 30% consulted general physicians, and when questioned about the type of medical institutions visited, 90% of patients consulted clinics.¹⁰ Our questionnaire has confirmed that larger numbers of cedar pollinosis patients consult ENTs and GPs compared to IMs.

Our results suggest that the most obvious differences in the prescription patterns for cedar pollinosis between ENTs, GPs and IMs are those of nasal corticosteroid drops and eye drops. In actuality, many factors including the patients themselves, features of the medical institution and the amount of airborne pollen present in a given season will affect the decision on drug prescription. Therefore, information obtained from our clinical vignettes is insufficient for use by our respondents. It may be that our results here do not represent the trends occurring in the prescription of drugs in actual clinical settings. However, our research does not focus on how well our results reflect true clinical settings, but on discovering any differences in the prescription patterns of ENTs, GPs and IMs for the same given clinical cases. What is important here is the fact that the differences discovered in the prescription patterns among the 3 groups are clearly reflected by the differences in the percentage of physicians prescribing nasal corticosteroid drops and eye drops. In order to improve the quality of cedar pollinosis treatment, it will be extremely necessary to identify the reasons why GPs tend to be reluctant in prescribing nasal corticosteroid drops and eye drops to patients with moderate/severe symptoms. This is intriguing since these GPs in particular examine a stable fraction of patients and understand the effectiveness of the guidelines. The reasons for reluctance may be that they are afraid of systemic side-effects triggered by steroids, or because patients who consult GPs often have complications and are already taking medication.^{8,11} Nevertheless, the clinical vignettes used here were designed so that complica-

Table 2 Potential undertreatment of Japanese cedar pollinosis according to the Allergic Rhinitis and its Impact on Asthma guideline or the Practical Guideline for the Management of Allergic Rhinitis in Japan¹⁵ recommendations

	Vignette 4			Vignette 5			Vignette 6		
	ENT n = 45	GP n = 69	IM n = 52	ENT n = 45	GP n = 71	IM n = 54	ENT n = 45	GP n = 71	IM n = 53
AH	12 (27)	29 (42)	21 (40)	1 (2)	7 (10)	14 (26)	0 (0)	7 (10)	11 (21)
AL	0 (0)	0 (0)	1 (2)	0 (0)	1 (1)	3 (6)	0 (0)	0 (0)	0 (0)
OOt	0 (0)	6 (9)	1 (2)	2 (4)	6 (9)	0 (0)	0 (0)	3 (4)	0 (0)
NsANS	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (4)	0 (0)	0 (0)	0 (0)
ND	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (2)	0 (0)	0 (0)	0 (0)
AH + AL	0 (0)	0 (0)	2 (4)	1 (2)	3 (4)	2 (4)	2 (4)	0 (0)	1 (2)
AH + OOt	1 (2)	6 (9)	1 (2)	0 (0)	2 (3)	1 (2)	0 (0)	4 (6)	3 (6)
AH + NsANS	2 (4)	2 (3)	8 (15)	1 (2)	3 (4)	8 (15)	0 (0)	4 (6)	7 (13)
AH + ND	0 (0)	1 (1)	0 (0)	1 (2)	4 (6)	0 (0)	0 (0)	0 (0)	0 (0)
AL + ND	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (2)
Total	15 (33)	44 (64)	34 (65)	6 (13)	26 (37)	31 (57)	2 (4)	18 (25)	23 (43)

Number of physicians, (%); ENT, ear, nose, and throat specialists group; GP, general physicians group; IM, internal medicine doctors group; AH, second-generation antihistamines; AL, antileukotriens; OOt, other oral medications (e.g. first-generation antihistamines, herbal medications, etc); NsANS, nonsteroid antiallergic nasal spray; ND, nasal decongestants.

tions would not be included.

Furthermore, when using the medical practice guidelines as a reference, physicians of all 3 groups, including the ENTs who are specialists, may not be fully aware of the severity of symptoms of allergic rhinitis patients. In some cases, drug treatment initiated by these physicians may be insufficient for the control of symptoms. When the prescription patterns suggested by the respondents were compared with the prescriptions recommended by the ARIA guideline and PG-MARJ, a fair proportion of the suggested prescriptions were considered as possible undertreatment. The figures were 25 to 65% of GPs and IMs for the 3 vignettes representing severe cases, and 33% of even the ENT group for the vignette showing a severe case with symptoms of rhinorrhea and sneezing. The response rate of ENTs in this research was high (85%), therefore it will be interesting to know the extent of divergence of the suggested prescription patterns from the guidelines, bearing in mind that these physicians are specialists. Nevertheless, the overall degree of compliance with the guideline was higher for ENTs compared to GPs or IMs with respect to the vignettes representing severe symptoms.

Our study has several limitations. The first is that our research was not conducted during the cedar pollen season. Decisions made by physicians and its patterns may have been elicited more accurately by our vignettes if the research was conducted immediately after the end of the pollen season. Secondly, because our research was based locally in Yamanashi Prefecture, it is somewhat difficult to extend the implications of our results to a nationwide scale. Thirdly, this

research was limited by the low response rate of GPs and IMs, who are non-specialist physicians. The motivation of respondents directly influences the quality of responses when using the clinical vignette method. From this standpoint, although the response rate of the GPs and IMs were 33% and 21%, respectively, it can be suggested that those who kindly responded to this complicated vignette method possessed sufficient motivation. Thus, reliability of the results from these physicians can be considered as high. Furthermore, it may be possible to speculate that GPs/IMs who did not respond, compared to those who did, are consulting the guidelines insufficiently, are prescribing simple medication such as oral medicine and have a higher potential for the undertreatment of patients. If these non-respondent physicians could be included in the statistical analysis, the difference between the prescription patterns found between ENTs and the other 2 groups might become clearer.

To conclude, our investigation of the drug prescription patterns for cedar pollinosis in Yamanashi Prefecture has shown that compared to ENTs, GPs and IMs have a lower tendency to concomitantly prescribe drugs for topical treatment such as nasal corticosteroids and eye drops with oral medication.

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APPENDIX

For the clinical vignettes shown below, please fill out the names of medications that you feel are most appropriate to prescribe.

A: Vignette 1 & 2

The amount of airborne cedar pollen is expected to be normal this season. The patient is a 34-year-old man who has visited with a major complaint of nasal symptoms which started 5 days previously. The visit was made 7 days after the beginning of cedar pollen dispersal. He mentions that he did not experience similar nasal symptoms at this time the previous year. Following medical tests and examinations, he was given a diagnosis of new-onset cedar pollinosis. He has no history of other allergies.

Vignette 1

The occupation of this patient is a clerical worker. The symptoms of rhinorrhea, sneezing and nasal congestion are all mild, and no symptoms involve the eyes.

Vignette 2

The occupation of this patient is a taxi driver. The symptoms of rhinorrhea, sneezing and nasal congestion are all mild, and no symptoms involve the eyes.

B: Vignettes 3-6

The amount of airborne cedar pollen is expected to be normal this season. The patient is a 34-year-old man who has visited with a major complaint of nasal symptoms which started 7 days previously. The visit was made 10 days after the beginning of cedar pollen dispersal. The level of airborne cedar pollen is estimated to reach its peak 1 week after his visit. He had been experiencing similar nasal symptoms around this time for the past several years, and apparently had medication prescribed by other clinics, although details are unknown. Following medical tests and examinations, he was given a diagnosis of cedar pollinosis. He has no history of other allergies.

Vignette 3

The occupation of this patient is a clerical worker. The symptoms of rhinorrhea, sneezing and nasal congestion are moderate, and symptoms involving the eyes are mild.

Vignette 4

The occupation of this patient is a clerical worker. The symptoms of rhinorrhea and sneezing are severe, but nasal congestion is mild. Symptoms involving the eyes are mild.

Vignette 5

The occupation of this patient is a clerical worker. The symptoms of rhinorrhea and sneezing are mild, but nasal congestion is severe. Symptoms involving the eyes are mild.

Vignette 6

The occupation of this patient is a clerical worker. The symptoms of rhinorrhea, sneezing and nasal congestion are all severe. Symptoms involving the eyes are also severe.

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	なし							

研究成果の刊行に関する一覧表（湯田厚司）

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	湯田厚司, 大久保公裕, 他	当科におけるスギ花粉症に対する 舌下免疫療法の現状と2年間の治療 成績	耳鼻免疫ア レルギー	26(4)	285-289	2008
	湯田厚司	小児花粉症の病態とは？	Q&Aでわかる アレルギー 疾患	4(5)	458-459	2008
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研究成果の刊行に関する一覧表（後藤穰）

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岡野光博	抗アレルギー薬 トロンボキサ ンA ₂ 合成阻害 薬・拮抗薬	永倉俊和、森 田 寛、足立 満	アレルギー疾 患イラストレ イテッド (第 2版)	メディカ ルビュー 社	東京	2010	214-21 9
岡野光博	花粉症.	泉 孝英	今日の心証の ために ガイド ライン 外来診 療	日経メディ カル開発	東京	2009	364-37 2
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