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MEETING REPORT

Current perspectives on the management of allergic rhinitis in selected Asia-Pacific countries: a meeting report

Educational Section

Hiroshi Chantaphakul[1], De Yun Wang[2], Hing Sang Chan[3], Hok-kung Marco Ho[4], Phaik Choo Khoo[5], Le Tran Quang Minh[6], Bee Wah Lee[7], Rommel Crisenio M Lobo[8], Tarit Muninnobpamasa[9], Sira Nanthapisal[10], C Gretchen Navarro-Locsin[11], Danilo A Poblete[12], Ing Ping Tang[13], Jenny Poh Lin Tang[14], Te-Huei Yeh[15], Dinesh Nagrale[16]

[1]Division of Allergy and Clinical Immunology, Department of Medicine, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand; [2]Department of Otolaryngology, Yong Loo Lin School of Medicine, National University of Singapore, Singapore; [3]Department of Otorhinolaryngology, Head and Neck Surgery, The Chinese University of Hong Kong, Hong Kong; [4]Virtus Medical Group, Hong Kong; [5]Subang Jaya Medical Centre, Malaysia; [6]Ho Chi Minh City ENT Hospital, Ho Chi Minh City, Vietnam; [7]Department of Paediatrics, Yong Loo Lin School of Medicine, National University of Singapore, Singapore; [8]Allergy Unit, Fe del Mundo Memorial Medical Center, Quezon City, Philippines; [9]Department of Otolaryngology, Phramongkutklao Hospital, Bangkok, Thailand; [10]Department of Paediatrics, Faculty of Medicine, Thammasat University, Bangkok, Thailand; [11]Department of Otorhinolaryngology – Head & Neck Surgery, St. Luke's Medical Center, Quezon City, Philippines; [12]Department of ENT Otolaryngology – Head and Neck Surgery, Calamba Doctors Hospital, Laguna, Philippines; [13]Department of Otorhinolaryngology – Head and Neck Surgery, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Sarawak, Malaysia; [14]SBCC Baby and Child Clinic (Asthma, Lung, Sleep, Allergy and Paediatric Centre), Gleneagles Medical Centre, Singapore; [15]Otolaryngology Department, National Taiwan University Hospital, Taipei, Taiwan; [16]A. Menarini Asia-Pacific Pte Ltd, Singapore

Abstract

A virtual roundtable meeting involving 16 allergic rhinitis (AR) management specialists from Asia-Pacific countries was held in September 2021 to gather insight into real-world treatment practices in the region. The discussion centred around specialists' responses to a previously completed self-administered, purpose-designed online questionnaire that covered several topics of interest to allergy specialists: assessment and monitoring of AR with a focus on the role of the visual analogue scale as a diagnostic and monitoring tool; preferred treatment options for AR focusing on second-generation antihistamines; and patient education requirements and methods to deliver appropriate patient-centred information. This report summarizes key points from the meeting.

Keywords: allergic rhinitis, Asia, H_1-antihistamine, patient education, symptom severity, visual analogue scale.

Citation

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Introduction

Allergic rhinitis (AR) affects an estimated 10–30% of the global population.[1] In Asia-Pacific, major epidemiological studies report a prevalence of 8.7% in adults[2] and higher in children aged 6–7 years (male 12.2%; female 8.9%) and 13–14 years (male 12.5%; female 15.0%).[3] The worldwide growth in allergy prevalence is currently being led by middle- to low-income countries, which suggests an association with rapid economic development and urbanization.[1,4] In light of this trend, the Asia-Pacific region might expect to experience a pronounced increase in AR prevalence in the years ahead.[5]

AR is characterized by rhinorrhoea, sneezing and nasal obstruction that occur in response to IgE-mediated inflammation of the nasal mucosa.[6,7] Many patients also experience non-nasal symptoms such as itchy, red, watery and swollen eyes (rhinoconjunctivitis), headache, and snoring.[4] Although not life-threatening, AR exacts a substantial toll on individual sufferers, their families and society as a whole. Symptoms, especially when severe or persistent, can interfere with daily activities and disrupt sleep patterns, affect school and work performance, and reduce quality of life.[7–9] The socioeconomic burden of AR includes direct costs to healthcare systems and patients (such as purchase of over-the-counter

treatments), and indirect costs due to absenteeism and decreased productivity.[2,10]

The widely used Allergic Rhinitis and its Impact on Asthma (ARIA) guidelines recommend second-generation, non-sedating, oral H_1-antihistamines as first-line treatment for AR.[11] As physicians in the Asia-Pacific region have access to suitable treatment options for AR, they should be well placed to follow the recommendations of international guidelines in this respect.[4]

To improve the management of patients with AR, it is important to understand current real-world practice patterns, which may vary according to healthcare system and local circumstances. One area of interest to physicians is treatment selection, especially regarding the role and positioning of second-generation antihistamines.[12] Another area of interest relates to diagnostic procedures and the criteria used to guide treatment decisions during routine monitoring of AR patients in the clinical setting. Notably, the 11-point visual analogue scale (VAS) is considered an important assessment tool in Europe as reflected in the ARIA guidelines.[6,7] As scant information exists about the VAS in the Asia-Pacific region, we considered it useful to explore the current level of acceptance and application of the instrument as an assessment and disease-monitoring tool in routine clinical practice and whether any modifications might render it more suitable to the Asian context.

To address these and other related issues, the 'Asia-Pacific Specialist Task Force on Allergic Rhinitis' (STAR–AR) meeting was held in September 2021 involving specialists from Hong Kong, Taiwan and Southeast Asia who are experts in AR management. The virtual roundtable meeting was co-chaired by Associate Professor Hiroshi Chantaphakul from Chulalongkorn University, Bangkok, Thailand, and Professor Wang De Yun from the National University of Singapore. The main objectives were to gain insight into real-world treatment practices in the management of AR in the Southeast Asia region with a focus on second-generation antihistamines, identify patient-based materials and tools that could support AR patient care with a focus on the VAS, and identify educational needs in AR disease management in Southeast Asia.

Methods

Before attending the STAR–AR meeting, all specialists had completed a purpose-designed questionnaire (Box 1) based on the clinical literature (for example, guideline recommendations) and meeting objectives. The questionnaires were sent electronically via Microsoft Forms and self-administered by participants. All tasks regarding the distribution of the questionnaire, data collection and aggregation were coordinated or performed by A. Menarini Asia-Pacific. De-identified collated responses were used as the basis for discussion during the virtual meeting. This article summarizes key findings from the meeting presented by topic and individual survey questions.

Characteristics of the expert group

Q1: In day-to-day medical practice, what is your clinical specialty?
The expert group comprised 16 specialists experienced in treating patients with AR. Specialties were Ear, Nose and Throat (ENT; *n*=9), Paediatrics (*n*=3) and Allergology (*n*=4). Participants were from Hong Kong (*n*=2), Malaysia (*n*=2), the Philippines (*n*=3), Singapore (*n*=3), Taiwan (*n*=1), Thailand (*n*=3) and Vietnam (*n*=2). One specialist from Vietnam was unable to attend the virtual roundtable meeting but the completed questionnaire was included in the collated results.

Assessment and monitoring of AR

Q2: Which clinical practice guidelines do you refer to when deciding a treatment approach for a patient with AR?
Across specialties, the guidelines most commonly used to decide a treatment approach for patients with AR were those from the ARIA group (*n*=14; 88%).[6,7] Approximately half the group also reported using the American Academy of Allergy, Asthma, and Immunology (AAAAI) seasonal AR guidelines (*n*=7)[13] and the Global Initiative for Asthma (GINA) guidelines (*n*=6).[14]

During discussion, the experts indicated that greater familiarity with the ARIA guidelines was due to their longevity and to the broad, regular and efficient ongoing dissemination of the guidelines and updates. The ARIA guidelines were considered practical, simple to use and easy to assess. An important difference amongst guidelines is that, whilst the ARIA group advocate for AR to be classified as intermittent and persistent, groups in the United States continue to use the terms 'seasonal' and 'perennial'. In practice, there is overlap between the classification systems. It was suggested that most climates in the Asia-Pacific region are conducive to patients having perennial AR.

Q3: Regarding diagnosis of AR, what procedures do you routinely perform?
The diagnostic procedures (Figure 1) used most frequently by participating experts were patient history taking (*n*=16), assessment of symptoms and severity (*n*=15), and assessment of comorbidities (*n*=15), followed by use of the VAS for nasal/ocular symptoms and allergy testing. About half the group reported using endoscopy to inform a diagnosis.

During discussion, a paediatrician noted that investigations beyond physical examination and VAS are not a major part of the diagnostic work-up of children as some parents find them unnecessary. However, if a child returns repeatedly, or if symptoms do not abate with initial therapy, the next stage would involve allergy testing (for example, skin testing, serum specific IgE measurement, nasal allergen provocation testing) and engaging other specialists such as an ENT specialist or sleep physician if sleep apnoea is present. An ENT specialist who mainly attends patients with moderate-to-severe AR or persistent AR also commented that procedures such as allergy

Box 1. Survey questions. Respondents could select all options that applied for each question, except for questions 1, 4, 5 and 8.

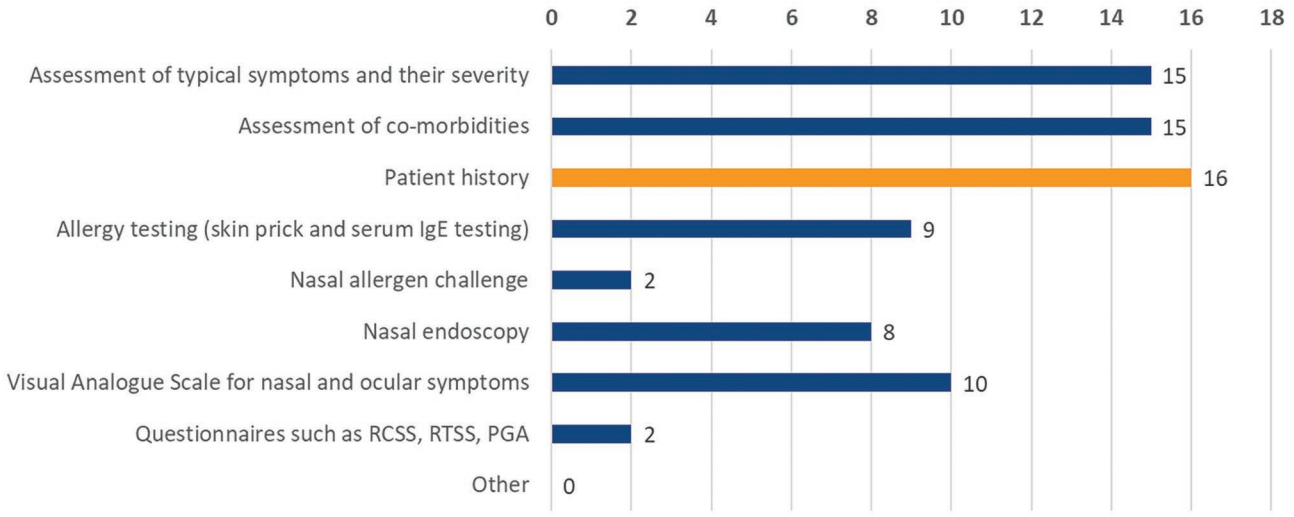
1. In day-to-day medical practice what is your clinical specialty?
   - General practitioner/family physician
   - Consulting physician
   - Allergy specialist
   - ENT specialist
   - Paediatrician
   - Other
2. Which clinical practice guidelines do you refer to when deciding a treatment approach for a patient with AR?
   - ARIA (Allergic Rhinitis and its Impact on Asthma) guidelines
   - AAAAI (American Academy of Allergy, Asthma and Immunology) seasonal AR guideline
   - GINA (Global Initiative for Asthma) guidelines
   - None
   - Other
3. Regarding diagnosis of AR, what procedures do you routinely perform?
   - Assessment of typical symptoms and their severity
   - Assessment of co-morbidities
   - Patient history
   - Allergy testing (skin prick and serum IgE testing)
   - Nasal allergen challenge
   - Nasal endoscopy
   - VAS for nasal and ocular symptoms
   - Questionnaires such as RCSS, RTSS, PGA
   - Other
4. AR severity is an important criterion to guide treatment; what parameters do you routinely assess to determine AR severity?
   - AR symptoms (rhinorrhoea, sneezing, nasal obstruction/crusting and eye symptoms) through history/active consultation with patient
   - Severity of AR symptoms (nasal and ocular) using a VAS
   - Allergy test results (skin prick and serum IgE testing)
   - Quality of life
   - Other
5. The ARIA guidelines now recommend using a VAS (0–100 mm) to determine the level of AR control (>50 mm, uncontrolled AR; 0–50 mm, partially to well-controlled AR; ≥50 mm, moderate-to-severe AR): is this something that you use to routinely monitor your patients with AR?
   - Yes
   - No
6. [If Q5 = Yes] What do you consider to be the main advantages of a VAS?
   - Patients find it easy to use
   - I find it easy to use
   - It is a quick test to perform
   - Interpretation of the results is straightforward and easy
   - It is flexible and can be used to distinguish small differences in symptom severity
   - Symptoms of AR can be assessed globally or separately
   - Results with VAS are reproducible
   - Other
7. [If Q5 = Yes] When do you use a VAS?
   - I use it for newly diagnosed patients to record a baseline severity of AR for their medical record
   - I routinely repeat VAS at all follow-up consultations
   - I use VAS only in patients whose symptoms are getting worse
   - I use VAS only in patients with severe symptoms
   - I use VAS routinely to monitor disease severity and the effectiveness of treatment
   - I use VAS to make decisions about starting, modifying or stopping treatment

- I use VAS to monitor disease severity in clinical trials involving patients with AR
- Other

8. [If Q5 = Yes] How often do you use a VAS in patients with AR?
   - Once a week
   - Every 2–3 days
   - Once a day
   - Twice a day
   - Other
9. [If Q5 = No] What are the main reasons you do not routinely use a VAS?
   - Patients complain that it is difficult to use
   - I find it difficult and time-consuming to do the test in a routine consultation
   - Interpretation of the results is complicated and time-consuming
   - Results with VAS are not easily reproducible
   - Results with VAS do not correlate with AR severity
   - Other
10. Regarding the VAS, what mode(s) of delivery do think your patients would prefer?
    - Printed paper-based 'ruler'
    - Online
    - Downloadable app for smartphone
    - Other
11. For an adolescent/adult patient complaining of mild AR symptoms, what would you consider to be first-line treatment?
    - Preventive measures and no treatment
    - Non-sedating oral H_1-antihistamine
    - Intranasal H_1-antihistamine
    - Nasal or oral decongestant
    - Leukotriene antagonist
    - Intranasal corticosteroid
    - Consider referral to an allergist for possible allergen immunotherapy
12. For an adolescent/adult patient complaining of moderate-to-severe AR symptoms, what would you consider to be first-line treatment?
    - Non-sedating oral H_1-antihistamine
    - Intranasal H_1-antihistamine
    - Non-sedating H_1-antihistamine ophthalmic
    - Intranasal corticosteroid
    - Intranasal corticosteroid + intranasal antihistamine
    - Oral corticosteroid (short course) + add-on therapy
    - Consider referral to an allergist for possible allergen immunotherapy
13. What is your preferred non-sedating H_1-antihistamine and why?
    - Bilastine
    - Cetirizine
    - Desloratadine
    - Fexofenadine
    - Levocetirizine
    - Loratadine
    - Rupatadine
    - Other
14. Patient education is important to improve awareness relating to AR; do you support any of the following?
    - Support with 'in clinic education/counselling'
    - Support with public awareness campaigns
    - Support with information leaflets, web sites, phone apps, etc.
    - Provide information on patient support groups
    - Other

AR, allergic rhinitis; PGA, Physicians Global Assessment; RCSS, Rhinoconjunctivitis Symptom Score; RTSS, Rhinoconjunctivitis Total Symptom Score; VAS, visual analogue scale.

Figure 1. Diagnosis of allergic rhinitis: procedures performed routinely amongst experts in the Asia-Pacific region (*n*=16).



PGA, Physicians Global Assessment; RCSS, Rhinoconjunctivitis Symptom Score; RTSS, Rhinoconjunctivitis Total Symptom Score.

testing and nasal endoscopy are important in patients with unresolving symptoms to confirm (where possible) prior clinical diagnoses from other clinicians. However, it was noted that the availability of diagnostic tests may vary by country; for example, nasal allergy provocation testing is not available in Taiwan.

Q4: AR severity is an important criterion to guide treatment; what parameters do you routinely assess to determine AR severity?
Most of the experts (*n*=10; 63%) indicated that they assess AR symptom severity (rhinorrhoea, sneezing, nasal obstruction/crusting and eye symptoms) through history taking/active consultation (for example, direct questioning) with the patient. Approximately one-third of the group (*n*=5) reported routine use of the VAS to assess nasal and ocular symptom severity. One expert reported evaluating patients' quality of life as a guide to AR severity. None of the experts reported using allergy test results (skin prick and serum IgE) to determine AR severity.

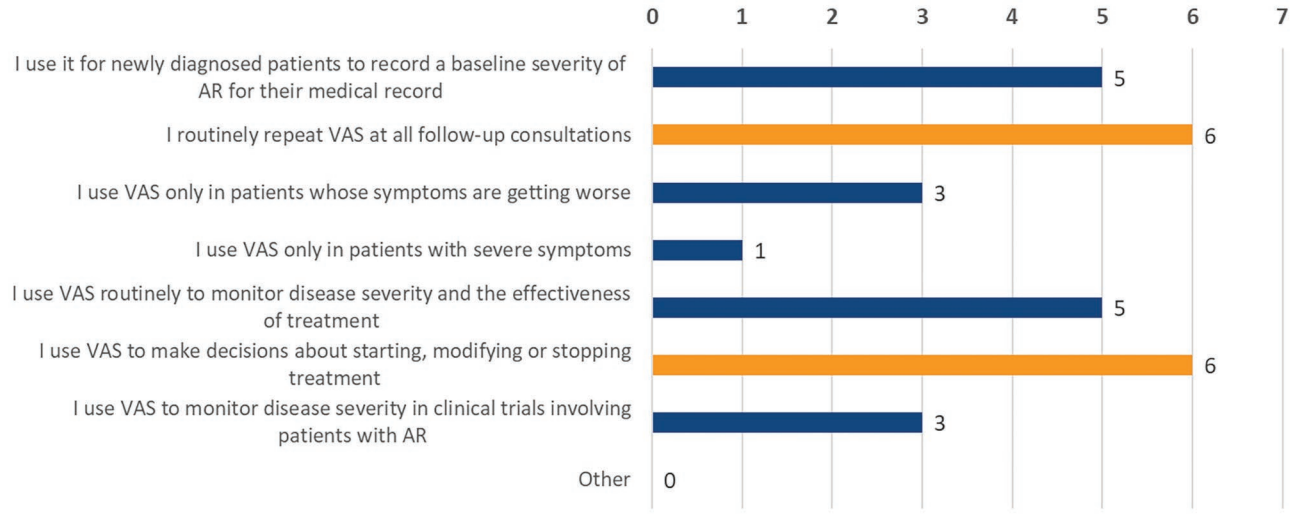
Roundtable discussion highlighted considerable variation by specialty in the approach to assessing AR severity. An ENT specialist used mainly history taking and (as required) nasal endoscopy to assess symptom severity. An allergist routinely used a skin-prick test and laboratory serum measurement to counsel patients about specific allergen avoidance and emphasized the importance of symptom tracking and skin-prick testing to guide treatment decisions and monitor treatment effectiveness. A paediatrician noted the specialty's general lack of access to the full range of objective measures/tools available to other specialists (for example, ENT surgeons), although paediatric pulmonologists are able to access skin-prick testing and lung function testing as required. A non-VAS user commented on its likely utility for monitoring symptoms in patients who are managed across subspecialties.

VAS as a monitoring tool

Q5: The ARIA guidelines now recommend using a VAS (0–100 mm) to determine the level of AR control (>50 mm indicates uncontrolled AR, 0–50 mm indicates partially to well-controlled AR and ≥50 mm is indicative of moderate-to-severe AR[6,15]): is this something that you use to routinely monitor your patients with AR?
Half of participating experts (*n*=8) reported using the VAS routinely to monitor the level of AR control. During discussion, it was noted that application of the VAS in daily practice might depend on the practice setting, number of patients and length of consult. An allergist commented on the subjective and non-symptom-specific nature of the VAS, preferring to use a numerical 0–4 scale to score individual symptom severity. An ENT specialist expressed a preference to use semantic qualifiers such as 'very bothersome/bothersome/not bothersome' to assess symptom severity and impact. There was discussion around the challenges of parents using the VAS on behalf of a young child because the score may be skewed towards symptoms that can be seen or heard (for example, runny nose, sneezing, snoring) rather than congestion. Some specialists thought the VAS might be more useful at follow-up to gauge the level of symptomatic improvement than at initial assessment of AR.

The expert panel agreed that the 50:50 split between users and non-users of the VAS likely reflects real-world practice. The ARIA group's encouragement to use the VAS has been met by considerable debate about its merit in daily practice,

Figure 2. Use of the VAS during patient management, according to experts in the Asia-Pacific region who reported routine use (*n*=8).



AR, allergic rhinitis; VAS, visual analogue scale.

with some groups arguing that the instrument is too general to address the broad range of symptoms associated with AR. Possibly illustrating this point, several studies organized by ARIA chairman, Jean Bousquet, involving different specialties and scoring systems found that VAS scores correlated well with general well-being.[16–18]

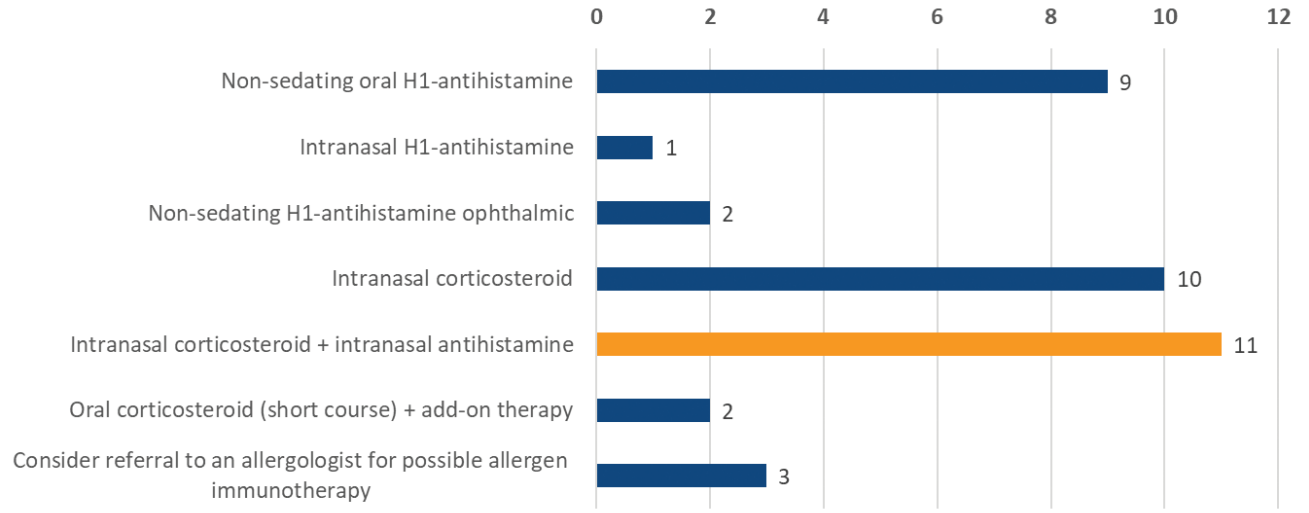
The ideal time interval for using the VAS in patient management was also discussed. An allergist recommended administering the VAS at scheduled clinic follow-up visits, which may be 1, 2 or more weeks apart. As he noted, despite evidence suggesting that medication adjustments should occur at shorter intervals, there is a high prevalence of perennial rhinitis in Asia and patients' symptoms tend to not resolve within a matter of days. As such, it is theoretically possible that using the VAS at short intervals to assess general well-being and guide treatment could lead to patients escalating to immunotherapy within a couple of weeks. A paediatrician agreed that too short an interval between VAS assessments can be counterproductive depending on the treatment effects being evaluated. For example, one might expect sneezing and nasal itching to improve within a few days of starting treatment with an antihistamine, whereas inflammatory symptoms treated with an intranasal steroid may take up to 2 weeks to subside, especially nasal congestion. In view of this timeframe, an ENT specialist suggested that 2 weeks might be an appropriate interval between VAS assessments to evaluate the effect of treatment on AR symptoms and the success of allergen avoidance measures. The type of practice (private or public) may also influence the follow-up frequency of AR patients; in private practice, too-frequent follow-up is not realistic and follow-up may occur after 2–4 weeks.

Q6: What do you consider to be the main advantages of a VAS?
Amongst the eight VAS users, its main advantages were ease of use for patients and clinicians (both *n*=6) and being quick to perform (*n*=5). Half the group (*n*=4 each) considered VAS results to be straightforward, reproducible, and easy to interpret and felt that the instrument permits both global and individual assessment of AR symptoms. One expert mentioned its flexibility and ability to distinguish small differences in symptom severity as advantages.

Despite general agreement amongst routine VAS users about its overall utility in managing AR in daily practice, some potential issues were identified. Symptom improvement after introduction of immunotherapy is delayed and, thus, is not sensitive to VAS measurement at short intervals. The major 'cut-off point' on the VAS for switching treatment is 50%; in clinical practice, however, it is important to track individual (not just global) symptoms. Lastly, the instrument is likely better suited to general practitioners (GPs) because specialists have more sophisticated tools to measure symptom improvement. Nevertheless, there was agreement overall that the VAS is a useful global assessment tool that can be used across specialties.

Q7: When do you use a VAS?
Amongst the eight self-reported VAS users, the most common clinical situations were routine use at follow-up consultations: to make decisions about starting, modifying or stopping treatment; to record baseline AR severity; and to monitor symptoms and treatment effectiveness (Figure 2). There was no further discussion about these survey results.

Figure 3. Preferred first-line treatment for an adolescent/adult patient with moderate-to-severe allergic rhinitis symptoms amongst experts in the Asia-Pacific region (*n*=16).



Q8: How often do you use a VAS in patients with AR?
Most VAS users reported asking their patients to use the instrument once a week (*n*=5) or every 2–3 days (*n*=2). Despite ARIA recommendations that patients should use the VAS every 2–3 days, the general view of the expert panel was that, in the absence of comorbidities, once-weekly use is more practical and sufficiently frequent to assess treatment effectiveness.

Q9: What are the main reasons you do not routinely use a VAS?
Amongst VAS non-users (*n*=8), the most common reasons for non-use were user (patient) difficulties (*n*=3), because it is too difficult and time consuming to administer during a routine consultation (*n*=2) and because it is too complicated and time consuming to interpret the results (*n*=2). One non-user commented that VAS results are not easily reproducible, whilst another considered that VAS results do not correlate with AR severity. 'Other' reasons for not using the VAS were patients' preference to relate their symptoms verbally, superfluity (that is, a clinical assessment is sufficient to gauge AR severity) and lack of availability of an 'app' version.

During discussion, an ENT specialist suggested that, whilst the VAS may be useful for uncomplicated AR, it may not be the optimal assessment tool at every consultation. For example, a patient presenting AR and concurrent ear problems or sinusitis may consider their AR symptoms to be comparatively less problematic on the day. Specific objective assessments, such as nasal scoping, may provide a more accurate clinical picture in such cases.

Q10: Regarding the VAS, what mode(s) of delivery do think your patients would prefer?
More than two-thirds (*n*=11; 69%) of participating experts considered that patients would prefer a printed paper-based 'ruler' VAS to assess their symptoms. The second most preferred mode of delivery was a smartphone app (*n*=6). During discussion, it was suggested that an app might be particularly useful for younger patients when using the VAS on their own.

Assessment and monitoring of AR: summary and future perspectives

Irrespective of specialty, the most commonly used guidelines by this expert group of allergy specialists from Asia-Pacific are the ARIA guidelines. Common diagnostic procedures for AR are patient history taking, assessment of symptoms and severity, and assessment of comorbidities. Symptom severity during routine follow-up is assessed most often through patient history/active consultation with the patient.

Despite ARIA recommendations to use the VAS to evaluate symptom control in patients with AR,[7] only half of participating specialists reported routinely using the instrument in clinical practice. Key issues regarding its use, based on survey responses and associated roundtable discussion, are summarized in Box 2.

There was general agreement that the VAS is a simple to use and easy-to-understand tool that may enhance patient engagement with symptom management. Nevertheless, certain modifications were proposed to support its use in Asia-Pacific. Because many urban patients and clinicians find the standard VAS ruler overly simplistic and unsophisticated, a more elaborate, refined tool is desirable. As a global VAS score is regarded by many clinicians as insufficient to inform management decisions, changes that permit individual symptom tracking as well as overall well-being were suggested. Clinicians must understand the severity of specific symptoms to make appropriate treatment decisions. For example, nasal obstruction severity is important for ENT surgeons when evaluating the need for surgical intervention. The expert

group also emphasized the importance of considering patient functioning, not just symptom severity, in the treatment selection process. Qualifiers such as 'severe symptoms/extremely bothersome' and more sophisticated graphics that reinforce VAS increments (0–10) were suggested as useful enhancements to overcome any issues relating to patients' non-familiarity with using a numerical rating scale. Digitalization and interactivity of clinical tools were also regarded as important to develop and maintain patients' interest and engagement over the long term, particularly amongst younger patients. To this end, an app that allows patients to tick boxes and transmit results to their clinician was considered useful.

A need was raised for the VAS to be culture/country specific and to take cost issues into account. Despite the ubiquity of smartphones across the Asia-Pacific region, an online or app-based VAS may not be the most suitable delivery method in some countries due to the cost of data and/or regularity of internet access. A paper-based VAS may be preferred in such settings because patients can easily record their symptoms at a specific timepoint requested by the doctor (for example, 3 days or 1 week after treatment initiation). As shown by the COVID-19 pandemic, a paper-based VAS can be used successfully during telemedicine consultations, provided that a video link is available.

There was discussion about the need for monitoring tools specific to paediatric patients given the potential 'disconnect' between a VAS score (or Total Symptom Score) provided by parents on behalf of a child and actual symptom severity. As a solution, some paediatricians use the VAS as a global assessment tool, then ask the child directly about their most bothersome symptom although a modified approach may be required for very young children. A paediatrician suggested changes to the VAS in line with the Asthma Control Test used for asthma-related symptoms. The Asthma Control Test has a child-driven and parent-driven score for children under the age of 12; after 12 years of age, children can respond themselves.[19,20]

A summary of suggestions for modifications to the VAS to support its use across Southeast Asia is provided in Box 2.

Box 2. Use of the VAS to monitor AR in the Southeast Asia region: summary of opinions.

Current perspectives on use of the VAS in Southeast Asia:

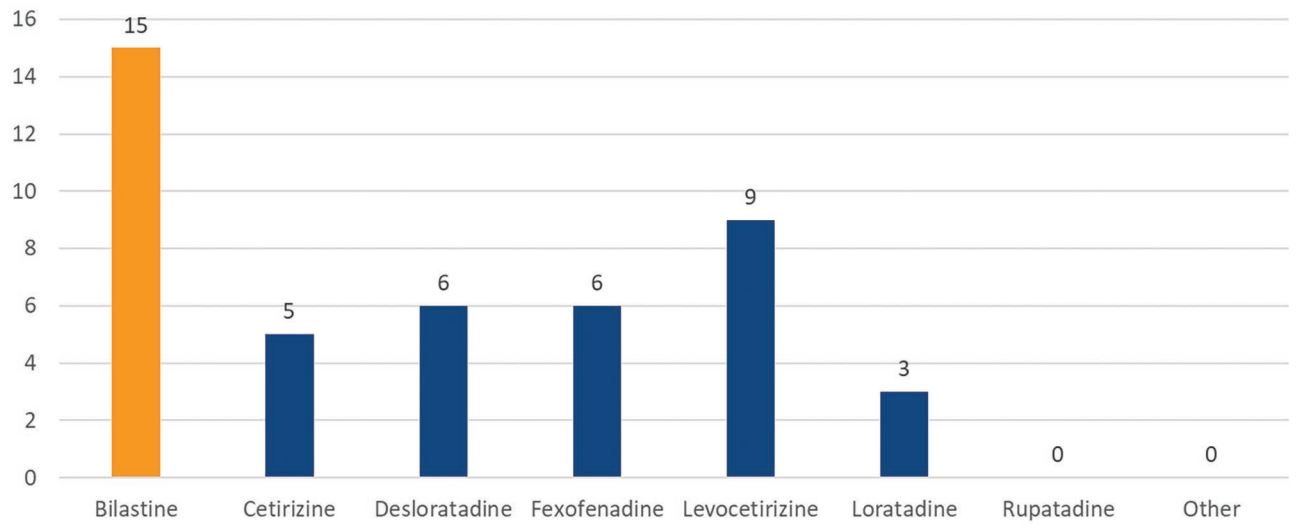
- Although the VAS is recommended by ARIA, only half of experts routinely use a VAS to monitor AR symptom control in clinical practice.
- The VAS is not always used at the baseline visit but is widely used at first and subsequent follow-ups to gauge improvement.
- Main advantages of the standard VAS:
  - Useful as a measure of general well-being
  - Quick and easy to perform
  - Reproducible
  - Global AR symptom assessment tool that can be used across specialties
  - Can be used for both intermittent and persistent AR
  - Useful for assessments when switching treatments
- Main disadvantages of the VAS:
  - Simplistic and not symptom specific
  - Can be difficult to use and interpret (particularly for patients unfamiliar with a numerical rating system)
  - Highly subjective (especially when parents report on behalf of a young child)
  - When introducing immunotherapy, symptom improvement is slower and not sensitive to measurement using a VAS at short intervals

Suggestions for improvements to the VAS for clinical use in Southeast Asia

- Content should be less simplistic and more refined, with a scale/scoring system for (1) overall well-being, (2) specific important symptoms, and (3) questions regarding how activity/functioning are affected
- Should remain quick, succinct, simple and straightforward
- Ensure materials are country and culture specific
- Employ digitalization and interactivity
- Use a slightly different tool for assessment of younger children by their parents compared with older children/adults who can answer for themselves
- A numerical rating system may not be as relatable to patients as adjectives such as 'very bothersome/bothersome/not bothersome'
- Use more sophisticated graphics to reinforce increments on the VAS

AR, allergic rhinitis; ARIA, Allergic Rhinitis and its Impact on Asthma; VAS, visual analogue scale.

Figure 4. Preferred non-sedating H_1-antihistamine for allergic rhinitis amongst experts in the Asia-Pacific region (*n*=16).



Treatment selection for allergic rhinitis

Q11: For an adolescent/adult patient complaining of mild AR symptoms, what would you consider to be the first-line treatment?
Amongst the 16 participating experts, most (*n*=14; 88%) selected a non-sedating oral H_1-antihistamine as first-line therapy for an adult/adolescent patient with mild AR symptoms. Other options were intranasal corticosteroids (*n*=4), intranasal H_1-antihistamines (*n*=3) and nasal/oral decongestants (*n*=2). Half of respondents (*n*=8) would recommend preventive measures only. During discussion, it was noted that first-line treatment selection may depend on the specific symptoms a patient was experiencing.

Q12: For an adolescent/adult patient complaining of moderate-to-severe AR symptoms, what would you consider to be the first-line treatment?
The most common first-line treatments selected by experts for an adult/adolescent patient with moderate-to-severe AR symptoms were intranasal corticosteroids with (*n*=11) or without (*n*=10) an intranasal antihistamine and non-sedating H_1-antihistamines (oral *n*=9; ophthalmic *n*=2) (Figure 3). Panel discussion suggested that this approach was standard across specialties. There was discussion about the relative merits of adding an oral antihistamine to intranasal corticosteroid/antihistamines, or switching treatment, in view of recent evidence suggesting no benefit with the combinatorial approach.[21,22] A Taiwanese ENT specialist was sceptical of this finding, however, given that combination therapy works well in clinical practice and is the preferred approach. Other experts agreed although noted that prescribing practices would likely change if real-world evidence was unsupportive of a benefit with combination therapy. Preparations combining an intranasal antihistamine/corticosteroid in a single spray bottle are becoming available, with some experts regarding this as a desirable option.

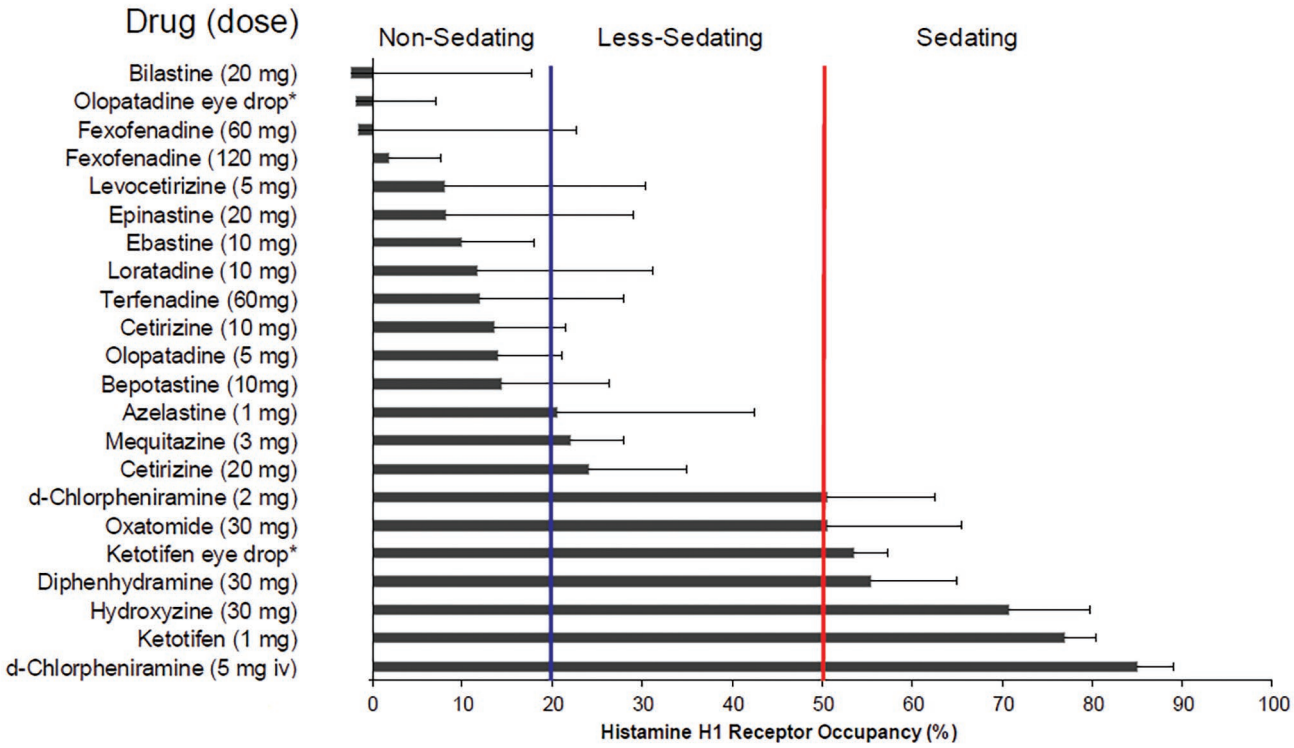
Q13: What is your preferred non-sedating H_1-antihistamine and why?
Bilastine (*n*=15) and levocetirizine (*n*=9) were the most commonly prescribed non-sedating H_1-antihistamines amongst the participating experts, followed by desloratadine and fexofenadine (*n*=6 each) (Figure 4).

Bilastine and fexofenadine are both classified as 'non-brain penetrating' H_1-antihistamines based on positron emission tomography measurements of brain H_1 receptor occupancy (Figure 5).[23] Bilastine has the highest selectivity for H_1 receptors amongst second-generation H_1 antihistamines and is not metabolized.[23] No dosage adjustments are required with bilastine or fexofenadine in patients with renal impairment, hepatic impairment or in the elderly.[23] The number of ARIA-recommended properties for bilastine and fexofenadine are 10 and 9.5, respectively.[23]

The panel noted that choice of antihistamine often depends on the local/institutional formulary, as this affects funding and affordability. Clinicians appreciate having a variety of antihistamines at their disposal in case of treatment failure. There is a psychological element to the perception of treatment effect such that patients often feel better after a switch, irrespective of the medication.

A paediatrician highlighted the importance of formulation when selecting treatment for children. Liquid formulations

Figure 5. Brain histamine H_1 receptor occupancies of various antihistamines and classification for sedating actions. Occupancy data are represented as the mean ± SD of measurements in [^{11}C]-doxepin-PET after oral single-dose, eye drop (*) or intravenous (iv) administration of the drugs.



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are preferred for younger children, whereas older children are able to swallow tablets. Taste is also important. Liquid preparations are limited to fexofenadine, desloratadine and loratadine, whereas a greater range of treatment options (for example, orodispersible tablets) are available for older children.

Treatment selection: summary and future perspectives

Amongst this expert panel from Asia-Pacific, the most common first-line treatment choice for adults/adolescents with mild AR is a non-sedating oral H_1-antihistamine. For patients with moderate-to-severe symptoms, the first-line choice is generally intranasal corticosteroids with or without an intranasal or oral antihistamine. Bilastine is the most commonly prescribed H_1-antihistamine for AR. Cost, local formularies and suitability of drug preparation are important factors influencing treatment selection. Formulation (liquid *versus* tablet) is important for young children. Small tablets are preferable to large ones for adolescent/adult patients.

Patient education

Q14: Patient education is important to improve awareness relating to AR; do you support patients with any of the following?
In-clinic education/counselling (*n*=14), information leaflets, websites, apps, etc. (*n*=13), and public awareness campaigns (*n*=12) were the most common methods implemented by participating experts to support their patients with AR. Half the group (*n*=8) reported providing information about patient support groups.

Discussion highlighted the need for country-specific patient educational materials. As AR is managed primarily by GPs or even pharmacists in some countries, educational materials must be made available at the primary care level and in pharmacies, not only in the specialist setting.

The expert panel also discussed manufacturer advertising. In Hong Kong, for example, there is considerable advertising of over-the-counter remedies, and self-medication for AR is common. Materials that can educate patients directly would be useful in this regard. Digital and printed material from credible sources could address unmet needs and support clinicians in everyday practice.

Patient education: summary and future perspectives

There is general support by Asia-Pacific specialists for patient education about AR. In-clinic education and use of leaflets/digital information are amongst the most widely used methods.

In future, emphasis should be placed on developing country-specific educational material to ensure that patients have easy access to accurate and useful information. Other priorities include establishing programmes to foster confidence and empower patients to self-manage their AR without regular doctor visits and to allay concerns around medication use, particularly polypharmacy.

With regard to practitioner education, the panel noted that, in many countries, AR is often initially or totally managed by GPs, pharmacists and nurses. For example, in Hong Kong and Singapore, around 70% of AR is managed in primary care. Conversely, patients with AR in Thailand can access specialist care (for example, an ENT specialist) without GP involvement. As such, it is considered important that GPs as well as specialists are well educated regarding AR diagnosis, treatment and monitoring and have easy access to international guidelines.

Conclusions

This meeting provided valuable insight into current management practices of allergy specialists in the Southeast Asia region.

Previously, there was anecdotal evidence of variation in AR management approaches amongst Asian countries.[4] A key finding to emerge from this meeting was that, whilst the primary care provider (GP or specialist) may differ due to inter-country variation in healthcare systems, no substantial differences were identified in the clinical approach used to assess and monitor AR. Rather, management differences relate mainly to patient age (child or adult) and/or to specialty-related access to investigative tools/tests.

Suggestions by the expert panel to increase acceptability and use of the VAS in the Asia-Pacific region included adding descriptors and/or graphics to the numerical scale and using a symptom-specific (not just global) approach. A smartphone app was considered useful to engage younger patients in particular.

Second-generation non-sedating H_1-antihistamines and nasal corticosteroids are key components of the treatment strategy for patients with AR as per ARIA recommendations;[7,11] this approach was confirmed by the expert panel. Ongoing education of healthcare providers, GPs and specialists[24] is considered useful to improve AR disease management in the region and ensure that treatment aligns with recommendations in major international guidelines. Providing comparative data about the advantages of bilastine relative to other second-generation H_1 antihistamines may be useful in terms of guiding treatment selection.

Educational material targeted to patients is also considered important. Such material may benefit from being country specific, to account for differences in patient access to healthcare and local availability of medications for AR.

Lastly, it is important to acknowledge the limitations of the methodological approach used to gather insight into AR management practices in Asia-Pacific. The number of participants was modest and not inclusive of all countries in the region. The purpose-built questionnaire is not a validated instrument. A nominal group technique is not as robust as the Delphi method or equivalent in capturing concurring expert opinion. Nevertheless, the expert group sees value in sharing perspectives from Asia-Pacific with global colleagues for the unified aim of improving patient experience and patient outcomes.

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Correspondence: Hiroshi Chantaphakul, King Chulalongkorn Memorial Hospital, Division of Allergy and Clinical Immunology, Department of Medicine, Faculty of Medicine, Chulalongkorn University, 1873 Rama 4 Road, Pathumwan District, Bangkok 10330, Thailand. Email: hiroshi.c@chula.ac.th

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