Allergy, Asthma and Immunology Training in Internal Medicine Residents

BY MOLLIE ALPERN, MD, QI WANG, MS, AND MEGHAN ROTHENBERGER, MD

Common allergic conditions such as allergic rhinitis, asthma and antibiotic allergies are frequently encountered by internal medicine physicians. These conditions are a significant source of health care utilization and morbidity. However, many internal medicine residency programs offer limited training in allergy and immunology. Internal medicine residents’ significant knowledge deficits regarding allergy-related content have been previously identified. We conducted a survey-based study to examine the knowledge and self-assessed clinical competency of residents at an academic medical center to determine the need for further education in allergy and immunology. Our study revealed that the majority of these residents did not feel adequately prepared to treat allergic rhinitis, urticaria, contact dermatitis, antibiotic/drug allergies or anaphylaxis; and only half felt adequately trained to treat asthma. We believe that internal medicine residency programs should provide trainees with additional education in allergy and immunology in order to improve their knowledge and clinical competency.

COMMENTARY: DON’T BLOW OFF AR
Physicians should help patients with the Rodney Dangerfield of respiratory diseases.

BY BARBARA P. YAWN, MD, MSC, FAAFP

The above article, “Allergy, Asthma and Immunology Training in Internal Medicine Residents,” shines a light on an interesting issue: Many primary care physicians feel unprepared to address some of the most common respiratory concerns of patients. Allergic rhinitis (AR) is one of these.

Many of us view AR as a “nuisance” condition. Really, how much of a problem is a little runny nose? Well, it is a “big deal” to the 30 to 60 million Americans who suffer from AR and seasonal AR—up to one in four adults and more than one in three children.¹ Even with all of the effective over-the-counter therapies for AR, it remains the most common primary diagnosis for office visits in the United States and the most common chronic condition in children, surpassing asthma.²,³ That means if you are a primary care physician, you are likely dealing with AR on a daily basis.

Patients or parents usually try—often successfully—to diagnose and self-treat mild or seasonal AR with OTC medications.⁴,⁵ For those with moderate to severe AR, the burden is not trivial. AR, especially in its more symptomatic forms, is often associated with asthma and has a significant impact on quality of life, productivity, and functional status. The loss of productivity and decrement in quality of life is, on average, greater than that for diabetes.⁶ The very common symptom of nasal congestion affects sleep in people of all ages, and in children has been shown to interfere with school performance.⁷ Physicians still have an important role to play in the management of most cases of AR, whether it is evaluating and monitoring success of OTC treatment or providing supplemental support, advice and treatment when OTC isn’t enough. For instance, we can offer guidance with regard to use of intranasal steroids (INS). Although INS first moved to OTC status in 2013, many patients still do not know the medications are the first-line therapy, and/or they don’t know how to combine INS with antihistamines or decongestants for maximum relief when INS therapy alone is not sufficient.⁸ In addition, many patients don’t read the package insert that guides proper intranasal use—inserting the tip into nares using right hand for left side of the nose and left hand for right side of the nose, and directing the “squirts” of medication toward the outside of the nose (up toward the ear rather than straight into the nasal spectrum).⁹ Other patients, and especially parents of children and adolescents, may avoid INS for fear of the “steroid effect” or the possible rebound when they stop.
nternal medicine (IM) physicians commonly encounter allergic and immunologic conditions such as asthma, allergic rhinitis, and antibiotic allergies. Allergic rhinitis accounts for 14 million office visits per year in the United States, and 19.1 million Americans are diagnosed with allergic rhinitis annually. Asthma results in 439,000 hospitalizations annually and accounts for 3,600 deaths per year. Patients with a listed penicillin allergy have longer hospital stays (by 0.59 days) and have 23.4% more C difficile, 14.1% more MRSA and 30.1% more VRE infections compared with matched controls. Additionally, many patients are placed at risk when they are listed inaccurately as having a penicillin allergy.

Proper diagnosis and management of these common allergic conditions has enormous clinical implications for the IM physician.

Despite the clinical importance, many IM residency programs offer limited training in allergy and immunology. A recent study by Stukus et al revealed significant knowledge deficits in allergy-related content in IM physicians at academic medical centers across all levels of training and specialties. Further, this study found that residents and attending physicians who completed an elective rotation in allergy and immunology had better knowledge of diagnostic testing and management of common allergic conditions compared with those who did not complete an elective rotation.

Training in basic allergic and immunologic conditions should be an important part of all IM residency programs. However, that is not widely available. In the United States there are 421 IM training programs and only 75 allergy and immunology fellowship programs. Therefore, the vast majority of residency programs are not associated with an allergy and immunology department or fellowship training program.

Given concerns that residency training in allergy and immunology may be limited, we conducted a study of the issue at the University of Minnesota, a tertiary care center with an academic IM residency program and experiences in patients with allergic rhinitis: the role of congestion and inflammation. Ann Allergy Asthma Immunol. 2013;111(6):446-51.


no associated allergy and immunology fellowship. Our goal was to evaluate IM residents' attitudes, knowledge and self-assessed clinical competency in treating common allergic conditions, in order to determine the need for further education in allergy and immunology.

Methods
We conducted a survey-based study of University of Minnesota IM, medicine-pediatrics and medicine-dermatology residents. Participation was voluntary. The anonymous survey was offered to all residents during routine educational conferences. The survey included questions about the resident's attitude, knowledge and self-assessed clinical competency in treating common allergic conditions including rhinitis, urticaria, contact dermatitis, antibiotoic/drug allergies, anaphylaxis and asthma. We collected data on whether residents had received any formal training in allergy and immunology in medical school or residency, and whether or not they were aware that allergy and immunology questions are included on the American Board of Internal Medicine (ABIM) Internal Medicine Certification Exam. The survey also included questions about the resident's interest in additional clinical and/or didactic training in allergy and immunology.

Survey responses were dichotomized. Chi-square tests (or Fisher's exact tests if frequency of any response was less than 5) were performed to compare responses between groups (IM vs medicine-pediatrics and medicine-dermatology residents). Analyses were performed using Statistical Analysis Software (version 9.3, SAS Institute Inc., Cary, NC). A two-sided P-value<0.05 was considered statistically significant.

Results
There were 67 total participants (n=67) in the study, including 48 IM, 14 medicine-pediatrics and 5 medicine-dermatology residents. The survey response rate was 47.9% (67/140) of current residents. All levels of training were included. Of the participants, 59.7% (40/67) were in their PGY1/PGY2 year of training and 40.3% (27/67) were PGY3/PGY4/PGY5. 79.1% (53/67) had received no formal training in allergy and immunology in medical school, and 86.6% (58/67) had not received any formal training during residency. This lack of residency training was more pronounced in the IM residents, at 91.7% (44/48), than in the medicine-pediatrics/medicine-dermatology residents, at 73.7% (14/19) (P=0.10).

Only 38.8% (26/67) of all residents felt very prepared to treat allergic rhinitis. Similarly, only 14.9% (10/67) felt very prepared to treat urticaria, 20.9% (14/67) felt very prepared to treat contact dermatitis/skin allergies, 16.7% (8/48) felt very prepared to treat antibiotic/drug allergies, and 20.8% (10/48) felt very prepared to treat anaphylaxis. There was no statistically significant (P<0.05) difference between IM residents and medicine-pediatrics/medicine-dermatology residents, except for anaphylaxis with P=0.0009.

<table>
<thead>
<tr>
<th>Condition</th>
<th>IM Residents (N=48)</th>
<th>Medicine-Pediatrics/Medicine-Dermatology Residents (N=19)</th>
<th>Total (N=67)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergic rhinitis</td>
<td>Not at all/slightly/moderately prepared 29 (60.4%)</td>
<td>12 (63.1%)</td>
<td>41 (61.2%)</td>
</tr>
<tr>
<td></td>
<td>Very/extremely prepared 19 (39.6%)</td>
<td>7 (36.8%)</td>
<td>26 (38.8%)</td>
</tr>
<tr>
<td>Urticaria</td>
<td>Not at all/slightly/moderately prepared 42 (87.5%)</td>
<td>15 (79.0%)</td>
<td>57 (85.1%)</td>
</tr>
<tr>
<td></td>
<td>Very/extremely prepared 6 (12.5%)</td>
<td>4 (21.0%)</td>
<td>10 (14.9%)</td>
</tr>
<tr>
<td>Contact dermatitis/skin allergies</td>
<td>Not at all/slightly/moderately prepared 39 (81.3%)</td>
<td>14 (73.7%)</td>
<td>53 (79.1%)</td>
</tr>
<tr>
<td></td>
<td>Very/extremely prepared 9 (18.7%)</td>
<td>5 (26.3%)</td>
<td>14 (20.9%)</td>
</tr>
<tr>
<td>Antibiotic/drug allergies</td>
<td>Not at all/slightly/moderately prepared 40 (83.3%)</td>
<td>14 (73.68%)</td>
<td>54 (80.6%)</td>
</tr>
<tr>
<td></td>
<td>Very/extremely prepared 8 (16.7%)</td>
<td>5 (26.3%)</td>
<td>13 (19.4%)</td>
</tr>
<tr>
<td>Anaphylaxis</td>
<td>Not at all/slightly/moderately prepared 38 (79.2%)</td>
<td>7 (36.8%)</td>
<td>45 (67.2%)</td>
</tr>
<tr>
<td></td>
<td>Very/extremely prepared 10 (20.8%)</td>
<td>12 (63.2%)</td>
<td>22 (32.84%)</td>
</tr>
</tbody>
</table>

There was no statistically significant (P<0.05) difference between IM residents and medicine-pediatrics/medicine-dermatology residents, except for anaphylaxis with P=0.0009.
dermatitis/skin allergies, 19.4% (13/67) felt very prepared to treat antibiotic/drug allergies, and 32.8% (22/67) felt very prepared to treat anaphylaxis (Table). Regarding asthma, 56.7% (38/67) of residents felt very comfortable treating asthma in the inpatient setting, and 52.2% (35/67) felt very comfortable treating asthma in the outpatient setting. There was no statistically significant difference in preparedness for treating allergic rhinitis, urticaria, contact dermatitis/skin allergies, antibiotic/drug allergies, or asthma between the IM and the medicine-pediatrics and medicine-dermatology residents (P>0.05).

Of the 67 residents, only 36 (53.7%) knew there were allergy and immunology questions on the ABIM Internal Medicine Certification Exam. Most of the residents, 98.5% (66/67), thought education in allergy and immunology was an important part of IM training, and 80.6% (54/67) were interested in an elective rotation. Nearly all, 97.0% (65/67), were interested in a didactic curriculum.

Discussion

This study revealed a significant lack of knowledge and clinical competency among IM residents regarding the management of common allergic conditions: allergic rhinitis, urticaria, contact dermatitis, antibiotic/drug allergies and anaphylaxis. Only approximately half of the residents felt adequately trained to treat asthma. Our findings support what has been previously identified: that there’s a knowledge deficit among IM physicians regarding common allergic conditions.4

In our study, residents believed training in allergy and immunology is important during an IM residency. Further, almost all residents in our study would be interested in an allergy and immunology elective rotation and a didactic curriculum if they were available. This is an important and promising finding, in that residents are aware of this knowledge deficit and are interested in addressing it.

Conclusion

Our residents reported low levels of preparedness for managing common immunologic and allergic conditions, a finding that is consistent with previously published work.6 These results suggest that IM residency programs should provide additional education in allergy and immunology in order to expand the knowledge and improve the clinical competency of their trainees. MM

REFERENCES


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