

Letter to the Editor

Current practices among allergists on writing self-injectable epinephrine prescriptions for immunotherapy patients

To the Editor:

Although allergen immunotherapy (IT) is generally safe, it carries a risk of systemic reactions (SRs); predicting which patients will have SRs has proven to be difficult.¹

Self-injectable epinephrine (SIE) in the form of a device was first introduced in 1980 and allows physicians to give a potentially life-saving treatment to those patients at risk of having an SR.² However, there is no current consensus regarding the use of SIE prescriptions for patients on IT and the decision to prescribe SIE falls on the physician administering IT. Our objective was to investigate current practices among allergists on SIE-prescribing habits for IT recipients.

An 18-question survey was developed (see Table E1 in this article's Online Repository at www.jacionline.org). The anonymous survey was sent to allergist-immunologists by e-mail with the option of either electronic (Survey Monkey; http://www.surveymonkey.com/s.aspx?sm=vfGR87aDXmSMSSfHlzMtaw_3d_3d) or paper response. Subject recruitment was done by using the American Academy of Asthma, Allergy & Immunology online membership directory ("immunotherapy" as specialty) (n = 884), the American Medical Association–Freida online directory of US Allergy programs (n = 71), and contacting allergy societies in the United States (n = 66) for their participation. A total of approximately 1021 e-mails were sent out.

Two hundred ninety-nine surveys were received; 24 by mail and all others via electronic submission. Two hundred seventy-three of these surveys were completed (91.3%) by those who started them according to the data supplied by Survey Monkey.

The majority of respondents practice in the United States, with only a small percentage of international practitioners (5.1%). A total of 90.5% of the respondents had completed training at the time of response; the other 9.5% were still in an allergy and immunology fellowship training program. Median years in practice were 15 years (range, 1-44 years); most practitioners were in suburban (49%) and urban (39%) practice and only 9% were in rural practice. Group (47%), academic (30%), and solo (22%) practitioners made up the majority, with only 1% practicing in an HMO setting. All respondents had at least 1% of their patients on IT.

The occurrence of SRs where SIE was used among our sample ranged from 0 to 78 reactions per physician per year (mean of 0.72 and median of 3). SRs that occurred *after* patients left the physician's office were reported by 79.5%. Twenty percent have patients wait in their office 20 minutes or less after receiving IT.

A significant inverse relationship ($P = .045$) was seen with years in practice and SIE prescription; more years in practice was associated with lower prescriptions of SIE. Practice location or type was not associated with a difference in prescribing habits. Patient age was not significant in the decision to prescribe SIE (92.5%). A total of 98.4% of the physicians stated that they would give SIE to patients with a history of SRs to IT.

There is a wide range of SIE-prescribing habits for patients on IT among our sample: 13.5% do not prescribe SIE for any of their

patients on IT, 33.3% prescribe SIE to all their patients on IT, and the other 52.7% risk-stratify their patients by disease severity, history of reactions, and type of IT. For those who prescribe SIE to all their patients on IT, a quarter do not know whether their patients fill their prescription and 57.1% give IT even if the patient fails to bring their SIE to his or her IT appointment. In a related survey done in 2008 (n = 191), we found similar findings: 14.2% did not prescribe SIE for any of their patients on IT, 26.2% stated that all patients on IT require a prescription for SIE, and the other 59.6% also risk stratified based on similar factors.³

In both surveys, physicians felt that patients with severe persistent asthma on both omalizumab and IT, patients with a history of SRs, and patients on venom IT should have SIE prescribed.³ These findings are not surprising. We would expect that patients on omalizumab would have SIE prescribed as the joint task force has published recommendations which state that SIE be recommended for patients put on omalizumab therapy.^{4,5} Reasonably, it makes sense that patients with a previous SR to IT would be at risk of having another reaction and retrospective data have shown this to be true.⁶ Lastly, practice parameters on stinging insect hypersensitivity state that patients with a history of SRs to venom should carry SIE.⁷ In these 3 instances, the decision to prescribe SIE has been established; for other patients the decision is left to the physician. Although it has been difficult to predict which patients are at increased risk of having SRs to IT, a variety of factors that contribute to IT fatal reactions have been identified on the basis of several retrospective studies: the presence of uncontrolled asthma, errors in dosing and administration of injections, delay or failure to administer epinephrine, previous IT-related SRs, an inadequate postinjection waiting period, and administration of injections in suboptimal settings (eg, at home).⁶

It is surprising that 20% of our sample have patients wait only 20 minutes or less after IT given that current guidelines state that patients should wait at least 30 minutes in the physician's office after receiving IT,⁸ the above-mentioned data that showed that inadequate postinjection waiting period was associated with an increased risk of having an SR,⁶ and other retrospective data that have shown that 48% of SRs occur 30 minutes after injection.⁹ This may be an area in which we need to reeducate physicians and emphasize the importance of current guidelines.

Lastly, SIE use cannot save lives if it is not used properly or not available for use.^{2,6} Our study showed that of those physicians who prescribe SIE to all their patients on IT (n = 91), a quarter of these physicians do not know whether their patients fill that prescription and 57.1% give IT even if patients fail to bring their SIE to their IT appointment. We feel that if physicians deem that SIE is necessary they should put mechanisms in place in their clinic to see this is accomplished.

Allergists require guidance as to the question of which, if not all, patients on IT should receive SIE prescriptions. Our data show a wide range of practices among physicians and that 79.5% of these physicians had patients with delayed reactions; therefore, further study of the occurrence of SRs and death during IT (including reasons for decreased reports in recent years) and specific guidelines for SIE prescriptions are necessary. This will be helpful for both allergists and their patients.

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TABLE E1. Survey questions

1. What type of practice are you involved with?
 - a. Solo
 - b. Group
 - c. HMO
 - d. Academic/Medical Center-Based
2. Years in practice: _____
3. Still in training?
Yes/No
4. Is your practice primarily
 - a. Urban
 - b. Suburban
 - c. Rural
5. What area of the country do you practice in?
 - a. Northeast
 - b. Northwest
 - c. Midwest
 - d. Southeast
 - e. Southwest
 - f. Other _____
6. What percentage of your allergic rhinitis and/or asthmatic patients currently receive immunotherapy?
 - a. None
 - b. 1-25%
 - c. 26-50%
 - d. 51-75%
 - e. 76-100%
 - f. Other (please specify) _____
7. How many patients on IT have you treated with epinephrine secondary to systemic reactions in your office in the last year? _____
8. Do you prescribe self-injectable epinephrine to ALL of your immunotherapy patients?
 - a. Yes
 - b. No
 - c. Other (please specify) _____
9. Answer only if you answered "NO" to question 8—What proportion do you prescribe self-injectable epinephrine? (Please enter percent of patients on IT that you give self-injectable epinephrine prescriptions to.) _____
10. Does the age of the patient play a role in whether or not you decide to give a self-injectable epinephrine prescription to your immunotherapy patients?
 - a. Yes
 - b. No
 - c. Other (please specify) _____
11. Which statement best fits your practices:
 - a. I only give self-injectable epinephrine prescriptions to my pediatric patients
 - b. I only give self-injectable epinephrine prescriptions to my adult patients
 - c. Both adult and pediatric patients
 - d. Other (please specify) _____
12. Of the patients who receive immunotherapy, who do you prescribe self-injectable epinephrine? (check all that apply)
 - a. None
 - b. Only asthmatics
 - c. Only allergic rhinitis patients
 - d. Only patients on venom immunotherapy
 - e. Severe persistent asthmatics on omalizumab
 - f. All
 - g. Other (please specify) _____
13. Which subgroup of asthmatics on IT get a prescription for self-injectable epinephrine (check all that apply):
 - a. None
 - b. Intermittent
 - c. Mild persistent
 - d. Moderate persistent
 - e. Severe persistent
 - f. All
 - g. Other (please specify) _____
14. In those patients you prescribe self-injectable epinephrine to, how many patients fill that prescription?
 - a. None
 - b. 1-25%
 - c. 26-50%
 - d. 51-75%
 - e. 76-100%
 - f. Don't know

(Continued)

TABLE E1. *(Continued)*

15. If patients do not bring their self-injectable epinephrine for their IT appointment, do you still give them their immunotherapy injection?

a. Yes

b. No

c. Other (please specify) _____

16. Would you prescribe self-injectable epinephrine to a patient who had a prior systemic reaction to immunotherapy?

a. Yes

b. No

c. Other (please specify) _____

17. How long do you require patients to wait in your office after receiving an immunotherapy injection?

a. 15 minutes

b. 30 minutes

c. 1 hour

d. 2 hours

e. Other (please specify) _____

18. How many patients, who have waited in your office after the recommended time, experienced a systemic reaction after leaving the office?

a. None

b. 1-25%

c. 26-50%

d. 51-75%

e. 76-100%

f. Other (please specify) _____
