Chapter 4. Conclusions

Allergic rhinitis, as a common illness in the US working-age population, is the subject of a sizable amount of research. A small but growing body of research focuses on the effects of allergic rhinitis and its treatment on outcomes that are particularly relevant to working-age allergic rhinitis sufferers and the clinicians involved in their care, and to employers and health insurers. We addressed several questions that are key to understanding and improving allergic rhinitis care in the US. While many of these questions remain unanswerable based on currently available research, some firm conclusions can be reached, and several high priorities for future research can be identified.

Specific conclusions for each topic considered are summarized below.

Costs and Work Performance

- Allergic rhinitis is associated with enormous direct and indirect costs in the US, with estimates as high as $4.5 billion and $7.7 billion annually, respectively; an updated comprehensive burden-of-illness study is necessary to more precisely estimate direct and indirect costs, for which currently available estimates vary four- to six-fold.

- There are few well-conducted, generalizable studies of direct and indirect costs for currently available clinical treatments.

- Economic evaluations of allergic rhinitis treatments often do not adequately consider uncertainty about estimates of the efficacy of treatments, often inappropriately using cost-minimization analyses rather than cost-effectiveness analyses.

- There is a lack of consensus on an appropriate and clinically meaningful measure of "effectiveness" to be used in the denominator of a cost-effectiveness ratio.

- The few available standardized instruments that assess allergic rhinitis symptoms are not yet widely used.

- Additional studies are needed to better understand how the severity of allergic rhinitis symptoms and the various medications used to treat those symptoms affect productivity.

- In order to better estimate indirect costs of allergic rhinitis treatments, objective measures of work performance are needed to determine the relationship between symptom outcomes and work performance.

Environmental Measures

Based on the pathophysiology of allergic rhinitis, treatments that decrease allergen exposure sufficiently through environmental control measures can be expected to control symptoms. Our systematic review showed that:

- Allergen avoidance measures have been studied more often in children than in adults with allergic rhinitis.

- Studies of air filtration systems do not show strong evidence for decreasing rhinitis symptoms; however, studies were likely underpowered to detect clinically relevant differences.

- A few trials in highly selected patients suggest that dust-mite control measures such as an acaricide, impervious covers, and extra house cleaning may decrease rhinitis symptoms.

- Studies of mite-sensitive asthmatics do not demonstrate any overall clinical benefit of a variety of measures designed to reduce mite exposure. Although the small number of studies evaluating this question did not yield a definitive answer, the data for house dust mite controls are encouraging.

Immunotherapy

- Nearly all of 60 clinical trials of immunotherapy in allergic rhinitis reporting symptom outcomes favored injection immunotherapy over placebo.

- No serious adverse events were reported, and immunotherapy was generally well tolerated.

- A quantitative meta-analysis showed a consistent effect for immunotherapy for seasonal allergic rhinitis, but the conclusion about the effectiveness of immunotherapy for perennial allergic rhinitis was less certain.

- Primary quality concerns in this literature were related to small trial size, lack of standardized clinical outcome assessments, and trial design issues related to blinding.

Combined Treatments

- Combination symptomatic pharmacotherapy with antihistamines plus decongestants has been well studied and overall shows improved total and nasal symptom relief compared to monotherapy with either antihistamines or decongestants alone.

- Combination treatment with antihistamines plus nasal glucocorticoids improves nasal symptoms more than antihistamine alone, but not significantly more than monotherapy with nasal glucocorticoids.

- Other combinations have been studied in a small number of trials and overall show that compared with antihistamines alone: (a) the addition of ipratropium is beneficial for rhinorrhea symptoms; (b) ophthalmic antihistamine reduces eye itching; and (c) the mast cell stabilizer nedocromil sodium and non-steroidal anti-inflammatory drugs improve overall rhinitis symptoms.

Clinician Specialty Differences

Although differences in care and outcomes have been demonstrated between generalist and specialist care in other conditions, including asthma, few data are available in allergic rhinitis.

- Clinician-delivered patient education interventions coupled with medical treatment may improve allergic rhinitis symptoms more than medical treatment alone, as suggested in two studies.

- Several studies point to less-than-adequate knowledge regarding allergy treatment among patients in general medical practice.

- Few objective data are available to describe case mix and practice patterns in generalist and specialist care.

- Although survey data suggest that many patients are referred from generalist practices to specialist providers based on the severity of symptoms, there are no empirical published data to support that specialist practice has more severely affected patients.

Racial and Ethnic Variation

- There are few studies addressing any aspect of racial variation in relation to prevalence, treatment patterns, or response to treatment for patients with allergic rhinitis.

- The largest and most representative study, The National Health and Nutrition Examination Survey, 1976-80, does not show a consistent relationship between allergic rhinitis prevalence and race.

- Among the randomized trials reviewed for other questions addressed in this literature synthesis, only 13 of 116 described the racial characteristics of the study population.

- The only data on variation in treatment patterns with respect to race or ethnicity suggested that in a pediatric population, whites were more likely to continue injection immunotherapy treatment than non-whites.

- No data exist that describe variation in treatment outcomes by race.