

# Immunotherapy Cuts Allergic Rhinitis Costs

BY SUSAN LONDON  
Contributing Writer

SEATTLE — The cost of allergy immunotherapy among children with allergic rhinitis is quickly surpassed by savings in other health care costs, new data suggest.

"I am often asked by payers to justify the cost of allergy symptom treatments, allergy medications, and asthma medications," said investigator Cheryl Hankin, Ph.D., president and chief scientific officer of BioMedEcon LLC, in Moss Beach, Calif. "It's amazing to me that payers rarely know that allergy immunotherapy is the only disease-modifying treatment available for children and patients with allergies."

Research on the cost impact of this therapy in patients with asthma and allergic rhinitis in the United States has been limited, Dr. Hankin noted. Previous studies on the topic have yielded conflicting results.

In the retrospective study reported at the annual meeting of the American College of Allergy, Asthma, and Immunology, Dr. Hankin and her colleagues used a Florida Medicaid database to identify children younger than age 18 years given a new diagnosis of allergic rhinitis during a 9-year period (1997-2006). Children who received immunotherapy and had 18 months of follow-up data after starting the therapy were matched with children who did not receive immunotherapy according to age, comorbidities (atopic dermatitis, asthma, and conjunctivitis), sex, and race.

The investigators used Medicaid claims records to ascertain health care costs. Total health care costs were calculated as the sum of inpatient, outpatient, and medication costs.

Study results were based on 2,481 children who received immunotherapy and 150,615 children who did not. Analyses indicated that the median total cost of a

course of immunotherapy over the 18-month period was \$565, or about \$35 per administration, Dr. Hankin said.

The median total health care costs per patient, including the cost of immunotherapy in the children who received it, were \$1,809 or 29% lower in the immunotherapy group (\$4,329 vs. \$6,138).

In addition, the benefit began to emerge soon after the initiation of immunotherapy, according to Dr. Hankin. "At each time point, we were very surprised to find a highly significant effect, starting at 3 months, that continued to grow." The cost of the immunotherapy was offset by savings in other health care costs after only 6 months.

When costs were broken down by type, children who did and did not receive immunotherapy had similar median inpatient costs. However, those receiving the therapy had significantly lower median medication costs (\$1,469 vs. \$1,698) and outpatient costs, including the cost of the immunotherapy itself (\$2,391 vs. \$3,329).

Discussing the study's findings, Dr. Hankin noted that they may not necessarily be generalizable to patients with private insurance or to adults. At the same time, she pointed out, the nature of the study permits an assessment of immunotherapy under real-world conditions.

Innovations such as sublingual allergy immunotherapy could reduce or remove barriers to accessing treatment, Dr. Hankin commented. "Reducing barriers to treatment may in fact reduce the cost of negative outcomes of allergic rhinitis, so we would expect that possibly this would reduce health care costs further, and further improve the health of children with allergic rhinitis."

Dr. Hankin disclosed that she is a consultant for Greer Laboratories Inc., which also funded the study, and for Astmatx Inc. ■

## CLINICAL GUIDELINES FOR FAMILY PHYSICIANS

### Adult Rhinosinusitis

BY NEIL S. SKOLNIK, M.D., AND MERCEDES A. TIMKO, M.D.

Rhinosinusitis affects about 31 million people per year in the United States, with a direct annual health care cost of \$5.8 billion. The American Academy of Otolaryngology-Head and Neck Surgery has published an evidence-based clinical practice guideline for diagnosing and managing uncomplicated rhinosinusitis in patients aged 18 years and older (Otolaryngol. Head Neck Surg. 2007;137[suppl. 3]:S1-31).

Uncomplicated rhinosinusitis has no evidence of inflammation beyond the paranasal sinuses and nasal cavity. It is classified by duration: acute (less than 4 weeks), subacute (4-12 weeks), and chronic (longer than 12 weeks) with or without acute exacerbation.

Classification by symptoms defines acute rhinosinusitis as up to 4 weeks of purulent nasal drainage with nasal obstruction and/or facial pain, pressure, or fullness, often preceded by an upper respiratory infection. The challenge is to distinguish acute bacterial rhinosinusitis (ABRS) from viral rhinosinusitis (VRS). The latter is usually self-limiting, whereas ABRS often requires antibiotic therapy.

The guideline advises that diagnosis be made clinically with suspicion of VRS when symptoms are present for less than 10 days and are not worsening. Symptoms that are present and worsening at 10 days or more after the start of an upper respiratory infection, or worsening symptoms after an initial improvement within a 10-day period, are more indicative of ABRS.

Chronic rhinosinusitis (CRS) is defined as 12 weeks or more of two or more of the following symptoms: mucopurulent nasal drainage; nasal obstruction; facial pain, pressure, or fullness; hyposmia and inflammation; nasal or middle meatus polyps; and/or imaging that shows sinus inflammation.

Recurrent acute rhinosinusitis (RARS) is defined as four or more episodes of ABRS a year with no infection symptoms between episodes.

#### Acute Bacterial Rhinosinusitis

The assessment and treatment of symptoms, particularly pain, are critical in managing acute rhinosinusitis of either bacterial or viral etiology. Evidence supporting treatment of other symptoms, such as congestion and mucosal edema, is not as clear. The guideline supports the option to use decongestants, topical corticosteroids, antihistamines, mucolytics, and saline irrigation to manage symptoms.

The crucial decision is whether to initiate antibiotic therapy upon diagnosis or to continue supportive therapy or watchful waiting. The antibiotic therapy can be deferred for up to 7 days after diagnosis. Supportive measures may be acceptable only if symptoms are mild, including mild to moderate pain and a fever of less than 101° F, and if follow-up is ensured. If symptoms worsen or fail to improve after 7 days, the antibiotic therapy should be reassessed. Antibiotics are indicated if pain is moderate to severe and there is significant fever (higher than 101° F). They should also be considered in the elderly and those with significant comorbidities. Amoxicillin is the first-line agent for uncom-

plicated ABRS. For penicillin-allergic patients, trimethoprim/sulfamethoxazole or a macrolide is an effective alternative. Treatment time is not clearly defined, but longer duration of treatment is associated with more adverse events. Any patient on antibiotic therapy within 4-6 weeks of presentation with ABRS may have increased risk of bacterial resistance; a fluoroquinolone or amoxicillin/clavulanate would be preferable treatment. One should suspect a nonbacterial cause or drug-resistant bacterial infection—and should consider possible complications such as intracranial spread of infection—if no improvement is seen within 7 days of starting antibiotic therapy. Radiographic imaging is not advised for acute rhinosinusitis unless a complication or other diagnosis is suspected.

#### Chronic/Recurrent Acute Rhinosinusitis

Both CRS and RARS should be distinguished from isolated ABRS episodes, and conditions with similar symptoms—including rhinitis of allergic, nonallergic, and vasomotor types; anatomical anomalies; and facial pain—should be distinguished from non-sinus-related causes. The guideline advises assessment for factors that could modify management, including allergic rhinitis, cystic fibrosis, immunocompromised state, ciliary dyskinesia, and anatomical variation. Three key diagnostic tests for evaluation are nasal endoscopy, CT, and allergic and immunologic testing.

The guideline makes no treatment recommendations for CRS and ABRS, but states that providers should educate patients about control measures such as reducing risk of VRS (which often precedes ABR) by practicing good hand hygiene and avoiding smoking. Saline nasal irrigation may minimize symptoms if it is used when symptoms are first noted.

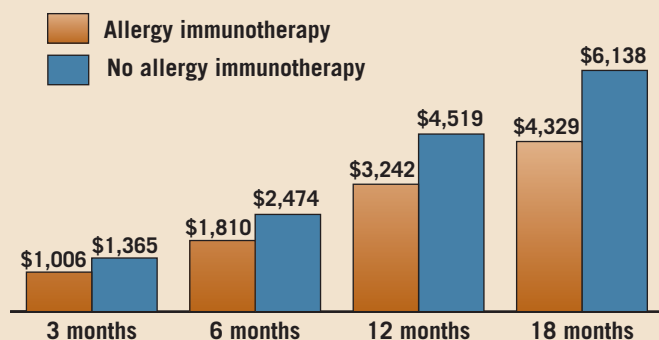
#### Bottom Line

The guideline emphasizes reliance on clinical symptoms to distinguish between viral and bacterial rhinosinusitis, and the use of narrow-spectrum antibiotics as initial treatment to reduce unnecessary antibiotic use and to minimize development of antibiotic-resistant bacteria, while treating bacterial rhinosinusitis if present.



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#### Total Health Care Costs For Children With and Without Allergy Immunotherapy



Note: Data are based on a study of more than 150,000 children under age 18 diagnosed with allergic rhinitis.

Source: Dr. Hankin