WISC 2012

Thursday, 6 December 2012: 11:00 AM - 12:30 PM, HICC, G.04
Session: UPPER AIRWAY ALLERGIES TRACK
Practical Aspects of Managing Upper Airway Allergies - Postgraduate Course

Managing Rhinosinusitis in Children

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Rhinitis and sinusitis are among the most common medical conditions and are frequently associated (Rhinosinusitis). Their symptoms overlap, and sinusitis rarely occurs in the absence of rhinitis. Both can significantly decrease the quality of life and require significant direct medical expenditures. In children, they significantly cause lost school days and reduced learning. The Allergist, who is trained in allergy, immunology, microbiology, internal medicine and/or pediatrics combined with an expert knowledge of nasal and sinus anatomy and appropriate pharmacology, is best suited to manage RS.

Classification of rhinosinusitis

The diagnosis of rhinosinusitis requires >2 of the following symptoms:

- Anterior or posterior mucopurulent drainage
- Nasal congestion
- Facial pain/pressure
- Decreased sense of smell

There are several categories of rhinosinusitis:

I. Recurrent acute rhinosinusitis: symptoms present for < 12 weeks and may recur >3 times per year. The patient is normal between episodes.

II. Chronic rhinosinusitis without nasal polyps (CRSsNP): symptoms present for >12 weeks.

III. Chronic rhinosinusitis with nasal polyps (CRSwNP): symptoms present for >12 weeks and there are bilateral nasal polyps in middle meatus

IV. Allergic fungal rhinosinusitis (AFRS): symptoms present for >12 weeks. There are specific AFRS criteria that include positive fungal stain or culture of allergic mucin and evidence IgE-mediated fungal allergy

Objective documentation is required for CRS and AFRS in the form of:

- Rhinoscopic examination
- Radiographic examination (sinus CT scan preferred)

Underlying causes of rhinosinusitis:

Common Conditions

- Allergic and non-allergic rhinitis
- Anatomic abnormality of the ostiomeatal complex: e.g. septal deviation
- Aspirin sensitivity
- Immunodeficiency: e.g. common variable immunodeficiency CVID, specific antibody deficiency, and selective IgA deficiency
- Rhinitis medicamentosa

Less Common Conditions

- Ciliary dyskinesia
- Kartagener's syndrome
- Young's syndrome
- Acquired immunodeficiency syndrome
- Bronchiectasis
- Cocaine abuse
- Wegener's granulomatosis
- Cystic fibrosis

Pathogenesis of chronic rhinosinusitis

- Acute bacterial rhinosinusitis (ABRS) might fail to resolve
- Bacterial colonization with enterotoxin-producing S aureus
- Bacteria can form biofilm on the sinus epithelium
- Drug-resistant infection can occur
- Osteitis of the underlying bone

Symptoms associated with the diagnosis of rhinosinusitis

Major symptoms

- Purulent anterior nasal drainage
- Purulent-discolored posterior nasal drainage
- Nasal obstruction-blockage
- Facial congestion-fullness
- Facial pain-pressure-fullness
- Hyposmia/anosmia
- Fever (acute only)

Minor symptoms

- Headache
- Ear pain-pressure-fullness
- Halitosis
- Dental pain
- Cough
- Fever
- Fatigue

Treatment of rhinosinusitis

Acute bacterial rhinosinusitis (ABRS):

- The most common bacteria isolated from the maxillary sinuses of patients with ABRS include S pneumoniae, H influenzae, and M catarrhalis, the latter being more common in children. Amoxicillin is considered first-line therapy. For patients with penicillin allergy, trimethoprim-sulfamethoxazole or macrolide antibiotics are cost-effective alternatives. Several additional antibiotics, including cephalosporins and fluoroquinolones, are FDA approved for treatment of ABRS.
- Intranasal decongestants might relieve nasal congestion but should be limited to 3 days to avoid rebound nasal congestion. Intranasal corticosteroid sprays have been studied but are not approved as adjunctive therapy.
- If ABRS does not improve after several days of antibiotics, prescription of an alternative antibiotic for several additional weeks should be considered.
- If there is still no response, a sinus CT scan is indicated to exclude anatomic abnormalities that might be predisposing to sinusitis. Underlying medical conditions should also be considered, including immune deficiency, gastroesophageal reflux disease, or defects in mucociliary clearance.

Treatment of chronic rhinosinusitis (CRS):

- Topical corticosteroid nasal sprays are recommended for all forms of CRS.
- Antihistamines might be helpful in patients with underlying allergic rhinitis.
- Antibiotics should be used to treat infection if nasal purulence is present, although antibiotics have not been officially approved for use in CRS.
- Antifungals, including oral terbinafine and topical amphotericin B, have been studied in patients with CRS. Most antifungal trials have failed to show efficacy, and antifungal agents are not recommended.
- In CRSwNP, patients might benefit from a brief course (10-15 days) of oral corticosteroids to shrink nasal polyps. Antileukotriene agents have received limited study and are not FDA approved for the treatment of nasal polyps.
- Some patients prefer the option of a surgical procedure that might eliminate an anatomical obstruction that could be the cause of RS, in the hope of a definitive cure. The current surgical approach to RS is functional endoscopic sinus surgery where the functional ostia which drain the sinuses are identified and enlarged. This approach has an impressive 1-2 year incidence of symptom improvement. However, patients with predisposing diseases that originally led to RS still suffer from these processes and often develop RS again at a later date.
- In AFRS, sinus surgery is almost always required to establish the diagnosis of AFRS, remove inspissated mucus, and restore sinus patency. Nearly all patients with AFRS have nasal polyps. After surgery, oral corticosteroids are recommended at 0.5 mg/kg daily, with gradual tapering of the dose. Corticosteroid nasal sprays are also recommended to control inflammation and prevent recurrence of nasal polyps.

Further Readings:

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