Treatment & Management of Acute Sinusitis in the Primary Care Setting

TREATMENT & MANAGEMENT OF ACUTE SINUSITIS IN THE PRIMARY CARE SETTING

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COMMUNITY HEALTH IMPROVEMENT PROJECT

SOUTH BURLINGTON FAMILY PRACTICE

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SLIDE 2: PROBLEM IDENTIFICATION

- Sinusitis is one of the most common conditions treated in the primary care setting[1]
- Symptoms of sinusitis mimic the common cold and other URIs, leading to overdiagnosis[1]
- ⅔ of people with acute sinusitis recover without treatment[2]
- However, inadequate treatment of some forms of acute sinusitis can lead to chronic sinusitis and negative long-term consequences with patients reporting worse quality-of-life than those with heart disease or chronic respiratory disorders[2, 3]
- **Description of need:**
  - Patients need to know when their sinus infection warrants medical attention and in the event that they do not, how to best manage symptoms on their own

SLIDE 3: PUBLIC HEALTH COSTS OF SINUSITIS

- Annually in the US:
  - 1 in 7 adults affected[4]
  - 31 million patients diagnosed[4]
  - ~12 million office visits[5]
  - $3 billion in medical costs, including outpatient and emergency department visits, ancillary tests and procedures, and medications[4,6]
- 5th most common diagnosis in which antibiotics are prescribed[4,6]
  - Vermont Department of Health proposed expenditure of $250,000 in 2016 to establish a hospital antimicrobial program to reduce hospital-acquired infections associated with antibiotic resistance and inappropriate antibiotic prescribing[8]
- Patients are more likely to visit the emergency room, spend greater than $500/year on health care, and see a specialist than those without sinusitis[7]

SLIDE 4A: COMMUNITY PERSPECTIVE

Interview 1: *Daniel Gerges, MD* – Otolaryngologist at UVM Medical Center

- We follow recommendations from the Clinical Practice Guidelines (AAO-HNS).
- Referrals to ENT are usually due to presumed recurrent sinusitis and chronic sinusitis. However, we do commonly see patients with a migraine variant that presents like a sinus infection.
- Migraine variant features:
  - "Sinus" headaches
  - Congestion misattributed to infection in the sinuses
  - Proven by a negative CT scan of the sinuses at the time of symptoms (ie. no evidence of sinus thickening when symptomatic)
- Thus, at the primary care level, migraine variant should be high on the differential when a patient comes in with symptoms mimicking sinusitis.
- Testing to be considered prior to referral:
  - CT scan of the sinuses with documentation of symptoms at the time of imaging

SLIDE 4B: COMMUNITY PERSPECTIVE

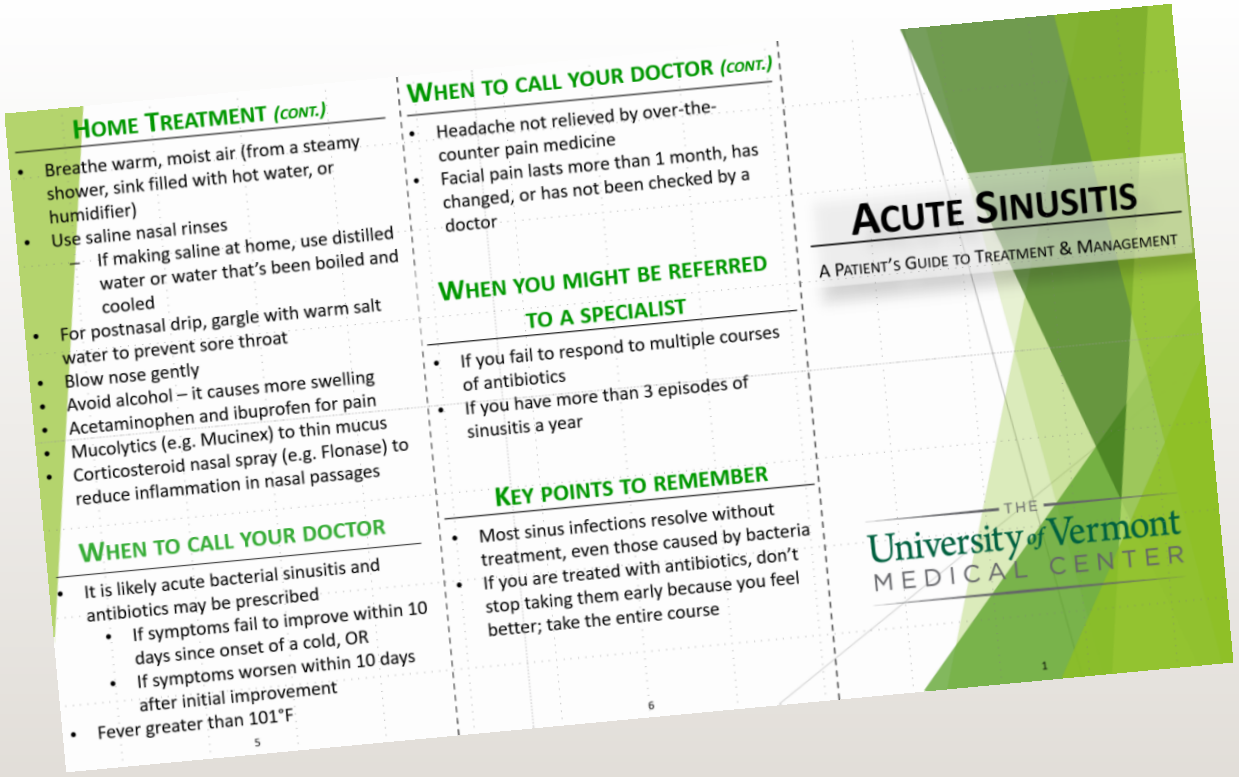
Interview 2: *Nathan Grohmann, MD* – Otolaryngologist at UVM Medical Center

- In ENT, we often see patients with migraines or atypical facial pain syndromes. Migraines can trigger a strong parasympathetic response in the nasal cavity and sinuses, resulting in symptoms that look like sinusitis. This is difficult to diagnose in the primary care setting due to a lack of equipment (eg. nasal endoscopy) and experience in dealing with this.
- Ideal treatment of sinusitis:
    1. Patients see their PCP, who determines if they have sinus disease.
    2. If so, CT scan the sinuses.
    3. If imaging shows mucosal thickening, polyps, or air-fluid levels in the sinuses, treat with a 4 week course of antibiotics and 3 weeks of prednisone. Also, start a twice daily sinus lavage, followed by twice daily Flonase to sustain gains made with initial oral medical therapy.
    4. Then obtain a post-treatment CT scan to see if they responded to treatment.

SLIDE 5: INTERVENTION & METHODOLOGY

- Intervention:
  - Provide patients with a quick reference guide of the causes, symptoms, and treatments of acute sinusitis that will help them determine how to best proceed with management
- Methodology:
  - Review literature sources and interview experts in the field in order to create a patient brochure that covers the most pertinent aspects of managing acute sinusitis, including:
    - Defining sinusitis and its etiologies
    - How to recognize symptoms of acute sinusitis
    - How to treat uncomplicated acute sinusitis at home
    - When to call the doctor
    - When referral to a specialist is indicated

SLIDE 6: RESULTS



Home Treatment (cont.)

- Breathe warm, moist air (from a steamy shower, sink filled with hot water, or humidifier)
- Use saline nasal rinses
  - If making saline at home, use distilled water or water that's been boiled and cooled
- For postnasal drip, gargle with warm salt water to prevent sore throat
- Blow nose gently
- Avoid alcohol – it causes more swelling
- Acetaminophen and ibuprofen for pain
- Mucolytics (e.g. Mucinex) to thin mucus
- Corticosteroid nasal spray (e.g. Flonase) to reduce inflammation in nasal passages

When to Call Your Doctor

- It is likely acute bacterial sinusitis and antibiotics may be prescribed
  - If symptoms fail to improve within 10 days since onset of a cold, OR
  - If symptoms worsen within 10 days after initial improvement
- Fever greater than 101°F

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When to Call Your Doctor (cont.)

- Headache not relieved by over-the-counter pain medicine
- Facial pain lasts more than 1 month, has changed, or has not been checked by a doctor

When You Might Be Referred to a Specialist

- If you fail to respond to multiple courses of antibiotics
- If you have more than 3 episodes of sinusitis a year

Key Points to Remember

- Most sinus infections resolve without treatment, even those caused by bacteria
- If you are treated with antibiotics, don't stop taking them early because you feel better; take the entire course

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Acute Sinusitis

A Patient's Guide to Treatment & Management

THE University of Vermont MEDICAL CENTER

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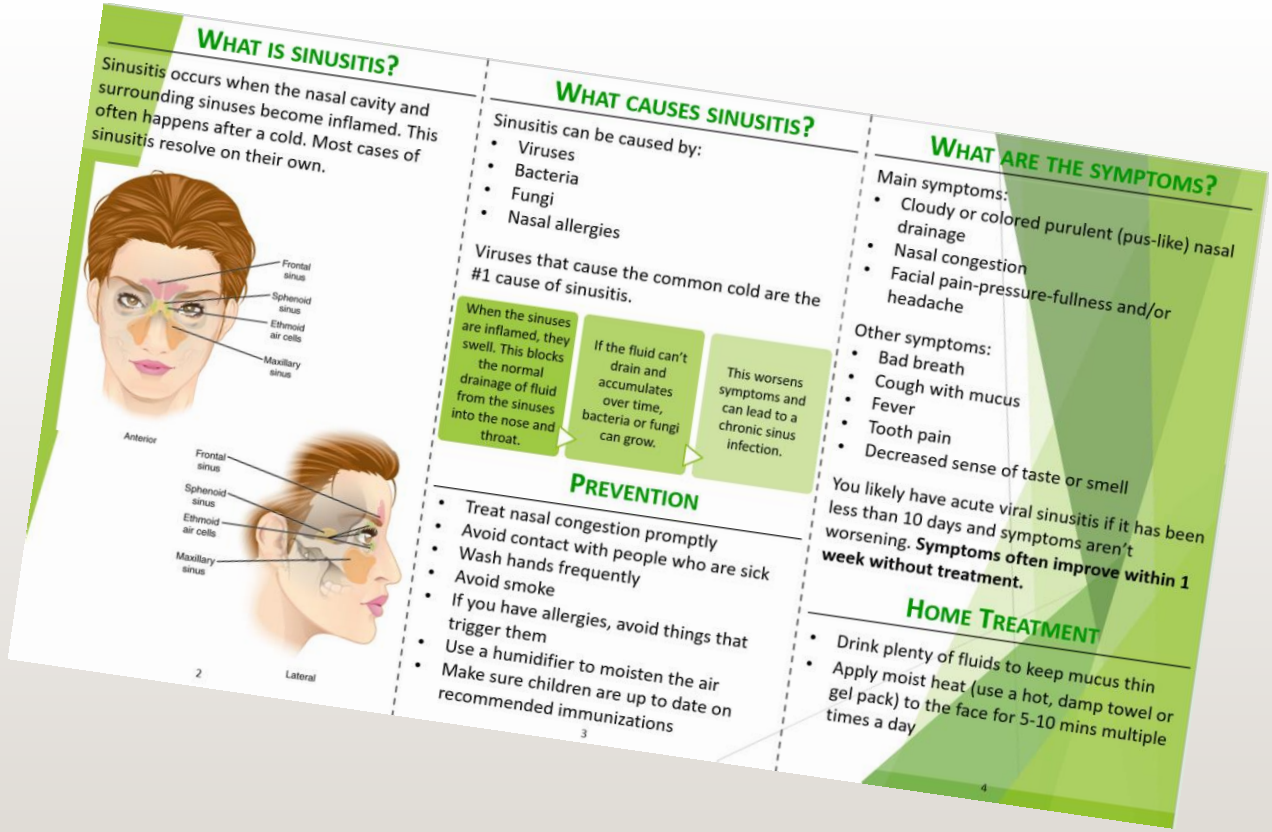

What is Sinusitis?

Sinusitis occurs when the nasal cavity and surrounding sinuses become inflamed. This often happens after a cold. Most cases of sinusitis resolve on their own.

2 Lateral

What Causes Sinusitis?

Sinusitis can be caused by:

- Viruses
- Bacteria
- Fungi
- Nasal allergies

Viruses that cause the common cold are the #1 cause of sinusitis.

When the sinuses are inflamed, they swell. This blocks the normal drainage of fluid from the sinuses into the nose and throat.

If the fluid can't drain and accumulates over time, bacteria or fungi can grow.

This worsens symptoms and can lead to a chronic sinus infection.

Prevention

- Treat nasal congestion promptly
- Avoid contact with people who are sick
- Wash hands frequently
- Avoid smoke
- If you have allergies, avoid things that trigger them
- Use a humidifier to moisten the air
- Make sure children are up to date on recommended immunizations

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What are the Symptoms?

Main symptoms:

- Cloudy or colored purulent (pus-like) nasal drainage
- Nasal congestion
- Facial pain-pressure-fullness and/or headache

Other symptoms:

- Bad breath
- Cough with mucus
- Fever
- Tooth pain
- Decreased sense of taste or smell

You likely have acute viral sinusitis if it has been less than 10 days and symptoms aren't worsening. **Symptoms often improve within 1 week without treatment.**

Home Treatment

- Drink plenty of fluids to keep mucus thin
- Apply moist heat (use a hot, damp towel or gel pack) to the face for 5-10 mins multiple times a day

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SLIDE 7A: EVALUATION OF EFFECTIVENESS

1. Conduct PRISM reports on the number of viral sinus infections diagnosed in 2017.
2. Distribute patient brochures with after visit summary for an entire year beginning in 2018 in order to allow most patients, who will likely see their primary care doctors at least one time in the year for an acute illness or annual wellness visit, to receive it.
   - Would need to collect data on the number of pamphlets actually distributed to patients to account for possible sampling bias.
3. Conduct PRISM reports on the number of viral sinus infections diagnosed in 2019.
4. Compare the number of viral sinus infections diagnosed between 2017 and 2019.
   - If the patient brochure was effective, we would find a statistically significant decrease in the number of viral sinus infections diagnosed in 2019 compared to 2017, suggesting that patients who received the brochure opted for supportive treatment and recovered without incident.

SLIDE 7B: EVALUATION OF LIMITATIONS

- Potential improper distribution of brochure, limiting patient access to information
- Educational or language barriers impeding comprehension of education material
- Patient apprehension regarding information recommended in a brochure versus from their physician, resulting in decreased compliance
- Patients' condition to physician intervention rather than self-treatment, resulting in unnecessary doctor's visits

SLIDE 8: RECOMMENDATIONS FOR FUTURE INTERVENTIONS

- In order to evaluate patients' knowledge and misperceptions regarding acute sinus infections, it would be helpful to create a short pre-brochure questionnaire to gather this information. Using these data, the next step could involve improving the brochure to better address patient's needs and dispel common misperceptions.
- Create a post-brochure questionnaire to assess patient satisfaction. If brochure was well received and showed expected outcomes, distribute brochure to surroundings family practices and primary care offices.

SLIDE 9: REFERENCES

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