SASKATCHEWAN REGISTERED NURSES' ASSOCIATION

RNs WITH ADDITIONAL AUTHORIZED PRACTICE
CLINICAL DECISION TOOL
MAY 2, 2017

ACUTE RHINOSINUSITIS ADULT & PEDIATRIC

DEFINITION

- Infection of mucosal lining of the paranasal sinuses of less than 4 weeks' duration.
- Uncomplicated rhinosinusitis is defined as rhinosinusitis without clinically evident extension of inflammation outside the paranasal sinuses and nasal cavity at the time of diagnosis (e.g., no neurologic, ophthalmologic, or soft tissue involvement).

IMMEDIATE CONSULTATION REQUIRED IN THE FOLLOWING SITUATIONS

If the client has any of the following symptoms:

- Systemic toxicity (systemic inflammatory response syndrome or sepsis)
- Altered mental status
- Severe headache
- Swelling of the orbit or change in visual acuity
- Black, necrotic tissue or discharge
- Infraorbital hypesthesia

CAUSES

- Most cases (98-99.5%) of infections are viral.
- If bacterial, most common organisms include: *Streptococcus pneumoniae, Haemophilus influenzae, Moraxella catarrhalis* and *Staphylococcus aureus.*
- Fungal infections
- Sinusitis is very rare in children (< 9 years) due to underdeveloped sinus cavities.

PREDISPOSING AND RISK FACTORS

- Common cold
- Allergies
- Deviated nasal septum
- Smoking
- Adenoidal hypertrophy
- Dental abscess
- Nasal polyps
- Trauma
- Foreign body

- Diving or swimming
- Neoplasms
- Cystic fibrosis
- Immunocompromised clients (e.g., diabetes, HIV)
- Inflammatory disorders such as Wegener's granulomatosis or sarcoidosis.
- Sniffing substances that irritate the lining of the nose (e.g., cocaine).
- Pregnancy

HISTORY

- Exposure to one or more of the predisposing factors
- Headache
- Facial pain
- Nasal congestion
- Pressure over involved sinuses increases when bending forward
- Purulent nasal discharge, which may be tinged with blood, can be present
- Dental pain, especially of upper incisor and canine teeth
- General malaise may be present
- Fever may be present
- Postnasal drainage
- Hyposmia/anosmia
- Ear pressure/fullness

PHYSICAL FINDINGS

- Temperature may be mildly elevated
- Client appears mildly to moderately ill
- Irritation of skin around nares
- Swollen nasal mucosa may be pale or dull red
- Nasal polyp may be present
- Dental abscess may be present
- Tenderness over involved sinuses
- Poor transillumination of sinuses
- Tenderness over a tooth
- Anterior cervical nodes may be enlarged and tender

- Cough may be present

DIFFERENTIAL DIAGNOSIS

- Dental abscess
- Nasal polyp(s)
- Tumour
- Presence of foreign bodies
- Periorbital cellulitis
- Upper respiratory tract infection
- Allergic rhinitis
- Vasomotor rhinitis
- Cluster headache
- Migraine headache

COMPLICATIONS

- Chronic sinusitis
- Contiguous spread of infection to intraorbital or intracranial structures
- Periorbital cellulitis

INVESTIGATIONS AND DIAGNOSTIC TESTS

- None

MAKING THE DIAGNOSIS

- Is made clinically based on a thorough history and physical examination.
- Acute bacterial rhinosinusitis (ABRS) must be distinguished from acute rhinosinusitis due to viral respiratory infections and non-infectious conditions, and only diagnosed when signs and symptoms of acute rhinosinusitis (ARS) (purulent nasal drainage plus nasal obstruction, facial pain-pressure, or both), persist without improvement for at least 10 days or if signs and symptoms worsen within 10 days after initial improvement.

MANAGEMENT AND INTERVENTIONS

Goals of Treatment

- Relieve symptoms
- Prevent complications

Appropriate Consultation

- Presentation consistent with those identified in the Immediate Consultation Required in the Following Situations area.
- Usually not necessary unless the condition does not resolve with treatment, symptoms progress, or complications arise.

Non-Pharmacological Interventions

- Warm facial packs
- Saline nasal drops/rinses/irrigations
  - Saline nasal irrigation 150 mL daily
  - Saline nasal spray 1 spray tid to qid prn

Pharmacological Interventions

Children

Decongestants

- Nasal (topical) decongestant sprays or drops may be used for the first 3-5 days if congestion is marked. Nasal (topical) decongestants are more effective than oral ones. Nasal decongestants are not to be used in children < 12 years of age.
- It is important to limit the use of a topical nasal decongestant to a period of 3 or 4 days to prevent development of "rebound" nasal congestion when the nasal spray is withdrawn (a complication called rhinitis medicamentosa).

Oral decongestant (ages 6-12 years, children > 12 years of age give adult dose)

- Pseudoephedrine (Sudafed) 30 mg orally q4-6h prn to a maximum of 120 mg per day x 7-10 days

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Nasal decongestant (only in children > the age of 12)

- Xylometazoline (Otrivin), 0.1% nasal spray, 2-3 sprays q8-12h prn for a maximum of 4 days

Analgesics

- Acetaminophen 15 mg/kg/dose orally q4-6h prn (maximum dose 75 mg/kg/day)
  Or
- Ibuprofen 10 mg/kg/dose orally q8h prn (maximum dose 40 mg/kg/day)

Intranasal steroid (only in children greater than 3 years of age)

- Fluticasone (Flonase) 50 mcg per actuation, 2 sprays in each nostril once daily x 7-10 days
  Or
- Mometasone (Nasonex) 50 mcg per actuation, 2 to 4 sprays each nostril twice daily x 7-10 days

Antibiotics

- Most cases of acute sinusitis will resolve without antibiotic treatment. Consider antibiotics if symptoms continue for longer than 10 days or worsen within the initial 10-day period.
- Amoxicillin 40-90 mg/kg/day in divided doses either bid or tid x 10 days (maximum 3 g/day)
- N.B. The 90 mg/kg/day dosing regime allows for a) BID dosing and b) coverage of bacteria with intermediate susceptibility.

If Penicillin allergy

- Clarithromycin 15 mg/kg/day in divided doses given bid (maximum 500 mg/dose) x 10 days
- Azithromycin 10 mg/kg orally on day 1, then 5 mg/kg daily orally on days 2-5 (maximum 500 mg day 1 and 250 mg days 2-5)
- Clarithromycin may be preferred over azithromycin due to resistance concerns.

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Adults

Decongestants

- Nasal (topical) decongestant sprays or drops may be used for the first 3-5 days if congestion is marked. Nasal (topical) decongestants are more effective than oral ones.
- It is important to limit the use of a topical nasal decongestant to a period of 3 or 4 days to prevent development of "rebound" nasal congestion when the nasal spray is withdrawn (a complication called rhinitis medicamentosa).
- Xylometazoline (Otrivin), 0.1% nasal spray, 12-3 sprays q8-12h prn for a maximum of 4 days
  Or
- Pseudoephedrine (Sudafed) 60 mg orally q4-6h prn x 7-10 days
  Or
- Pseudoephedrine (Sudafed)120 mg Extended Release orally every 12h prn x 7-10 days

Analgesics

- Manage pain and fever with simple analgesics:
  - Acetaminophen (Tylenol), 325 mg, 1-2 tabs orally q4-6h prn
    Or
  - Ibuprofen (Motrin), 200 mg, 1-2 tabs orally q6h prn

Intranasal steroid

- Fluticasone (Flonase) 50 mcg per actuation, 2 sprays in each nostril once daily for 7-10 days
  Or
- Mometasone (Nasonex) 50 mcg per actuation, 2 to 4 sprays each nostril twice daily for 7-10 days

Antibiotics

- Most cases of acute sinusitis will resolve without antibiotic treatment. Consider antibiotics if symptoms continue for longer than 10 days or worsen after 5 days.

In healthy adults suffering from sinusitis, short courses (e.g., 5 days) have the same benefit as longer courses of therapy (e.g., 10 days), with less harm.

- Amoxicillin (Amoxil), 500 mg orally tid for 5 to 10 days
  or if allergy to penicillin
- Doxycycline 200 mg orally once, then 100 mg orally bid for 5 to 10 days
  Or
- Clarithromycin 500 mg orally BID for 5-10 days
  Or
- Azithromycin 500 mg orally on day 1 and then 250 mg orally once daily on days 2 to 5.

Client and Caregiver Education

- Counsel client/caregiver about appropriate use of medications (dose, frequency, application, compliance, etc.).
- Client should not use antihistamines because these dry and thicken the secretions.
- Recommend increased rest during acute phase.
- Recommend increasing hydration (6-8 glasses of fluid per day).
- Recommend avoidance of irritants (e.g., smoke).
- Recommend avoidance of swimming, diving or flying during acute phase.

Monitoring and Follow-Up

- Follow-up in 3-4 days or sooner if symptoms progress despite therapy or if symptoms fail to respond to therapy.

Referral

- Any conditions or symptoms listed in the "Immediate Consultation Required in the Following Situations" section.
- Arrange follow-up with a physician/RN(NP) if symptoms persist/worsen following 3-4 days of antibiotic therapy or if client has hoarseness as the only symptom for > than 3 weeks' duration.

DOCUMENTATION

- As per agency policy

REFERENCES

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