ما تنسوا دعواتكم للزميل أيهم جرادات ، "اللهمَّ اغفر له واعفُ عنه وأكرم نُزله ووسّع مدخله ، واغسله بالماء والثلج والبرد ، ونقّه من الذنوب والخطايا كما يُنقّى الثوب الأبيض من الدنس ، وابدله داراً خيراً من داره ، وأهلاً خيراً من أهله ، وادخله الجنّة بلا حساب ولا سابق عذاب .. آمين يا رب العالمين".

Rhinosinusitis

جيوب الأنف الجيوب الأنفية

inflammation in both nasal Cavity & infection & Sinus

General Principles:

✓ Sinusitis is an inflammation and/or infection of the paranasal sinuses around the nose. or both.

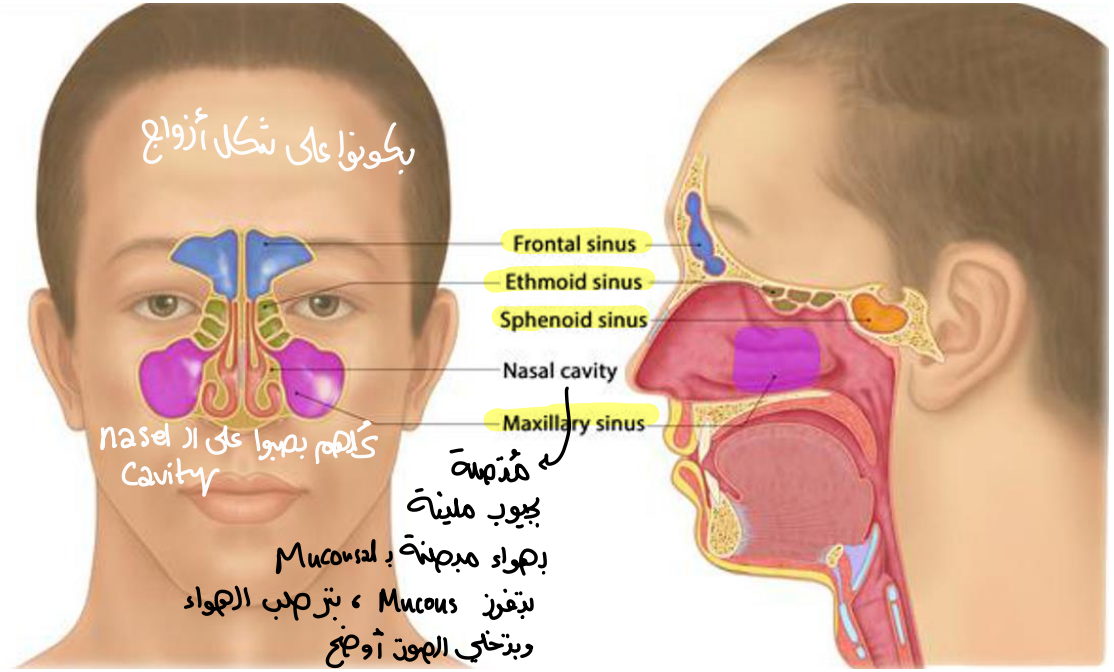
✓ Rhinosinusitis is preferred because sinusitis typically also involves the nasal mucosa. → Chronic / ACute

✓ Acute rhinosinusitis: * ممكن allergy أو virus أو fungal أو بكتيريا

- Most frequently caused by upper respiratory viruses → * مثل الرشح والإنفلونزا

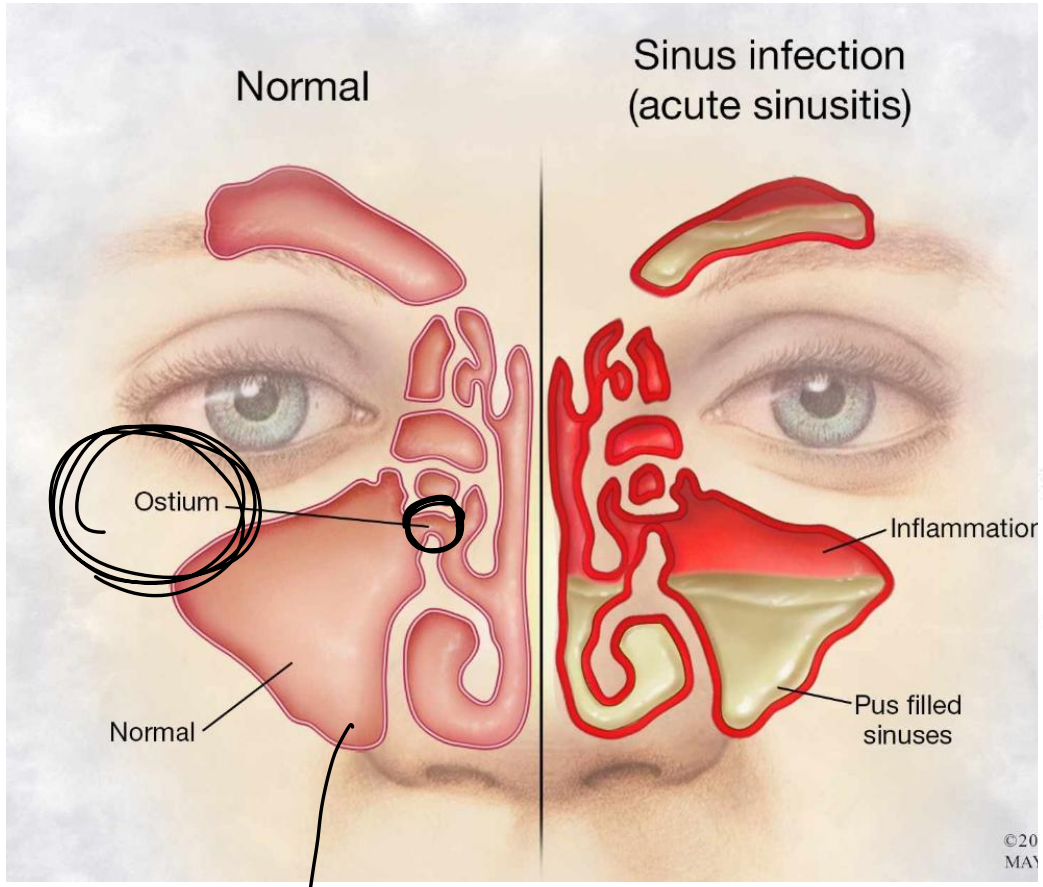
- Bacterial pathogens (S. pneumoniae, H. influenzae, M. catarrhalis & anaerobes): < 2% of cases, should be considered only if symptoms persist for > 10 days

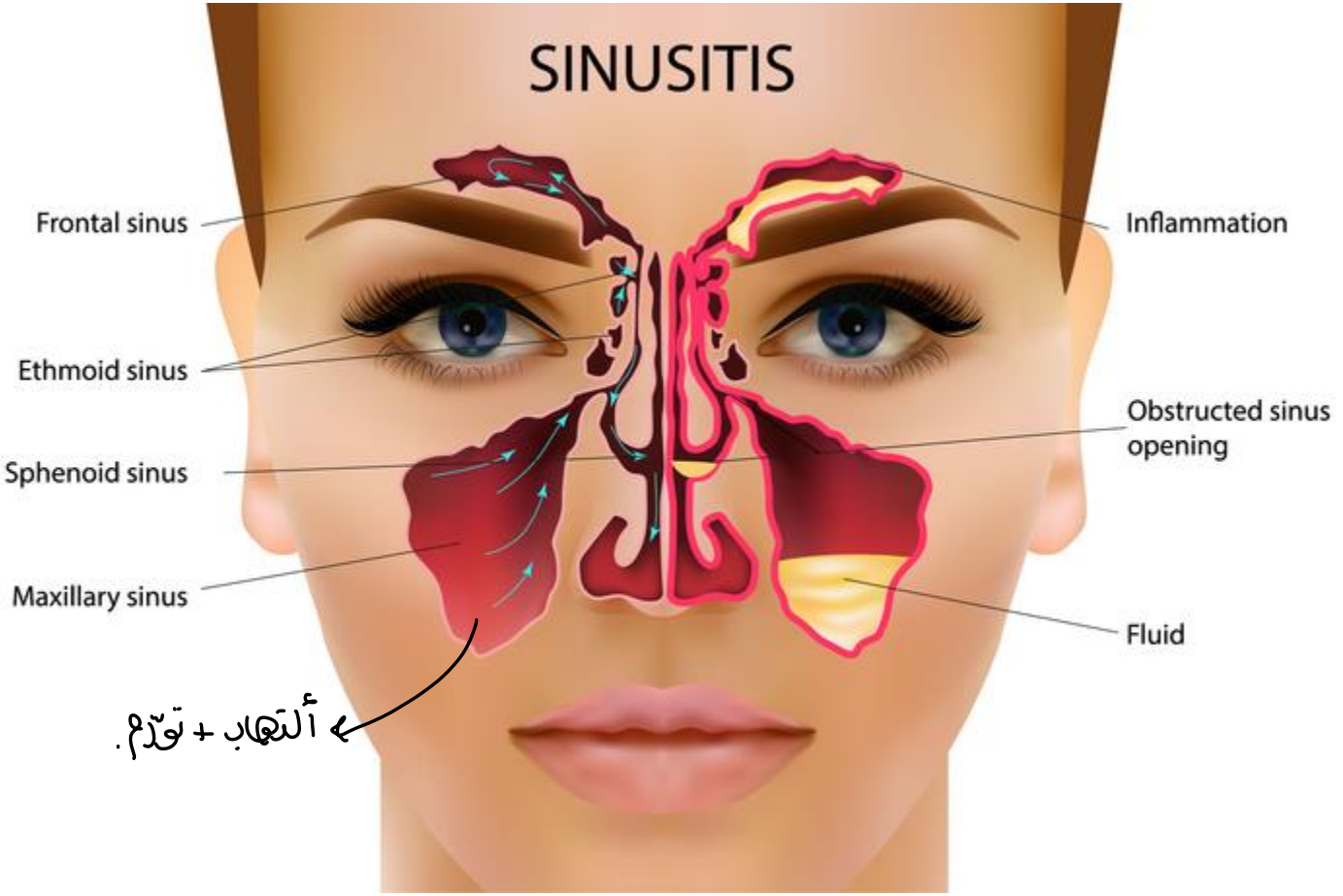
- Acute bacterial rhinosinusitis is often preceded by a viral respiratory tract infection that causes mucosal inflammation →obstruction of sinus ostia (pathways that drain the sinuses)



* فايروس رشح ممكن يعطي (inflammation) بال (Sinus ostia) اللي بتطلع المُخاط من الجيوب ، ويتكرها ← رح تتجمع السوائل بالجيوب وتصير بيئة مُناسبة لنمو البكتيريا .

* ممكن الحساسية من الغبار هي اللي تعطي (inflammation) ← bacterial





ألتهاب + تورّم .

بتحوي على أهداب بتحرك المُخاط خارج الأنف

- ✓ Chronic rhinosinusitis:
  - may be caused by any of the etiologic agents responsible for acute sinusitis, as well as S. aureus, Corynebacterium diphtheriae, and many anaerobes.
  - Possible contributing factors include asthma, nasal polyps, allergies, or immunodeficiency.
  - The pathogenesis of chronic rhinosinusitis has not been well studied (caused by more persistent pathogens or a subtle defect in the host's immune function)

persestant

Secretion → pus + bacterial cells + purulent

Common cold → شفافة transparent.

Diagnosis:

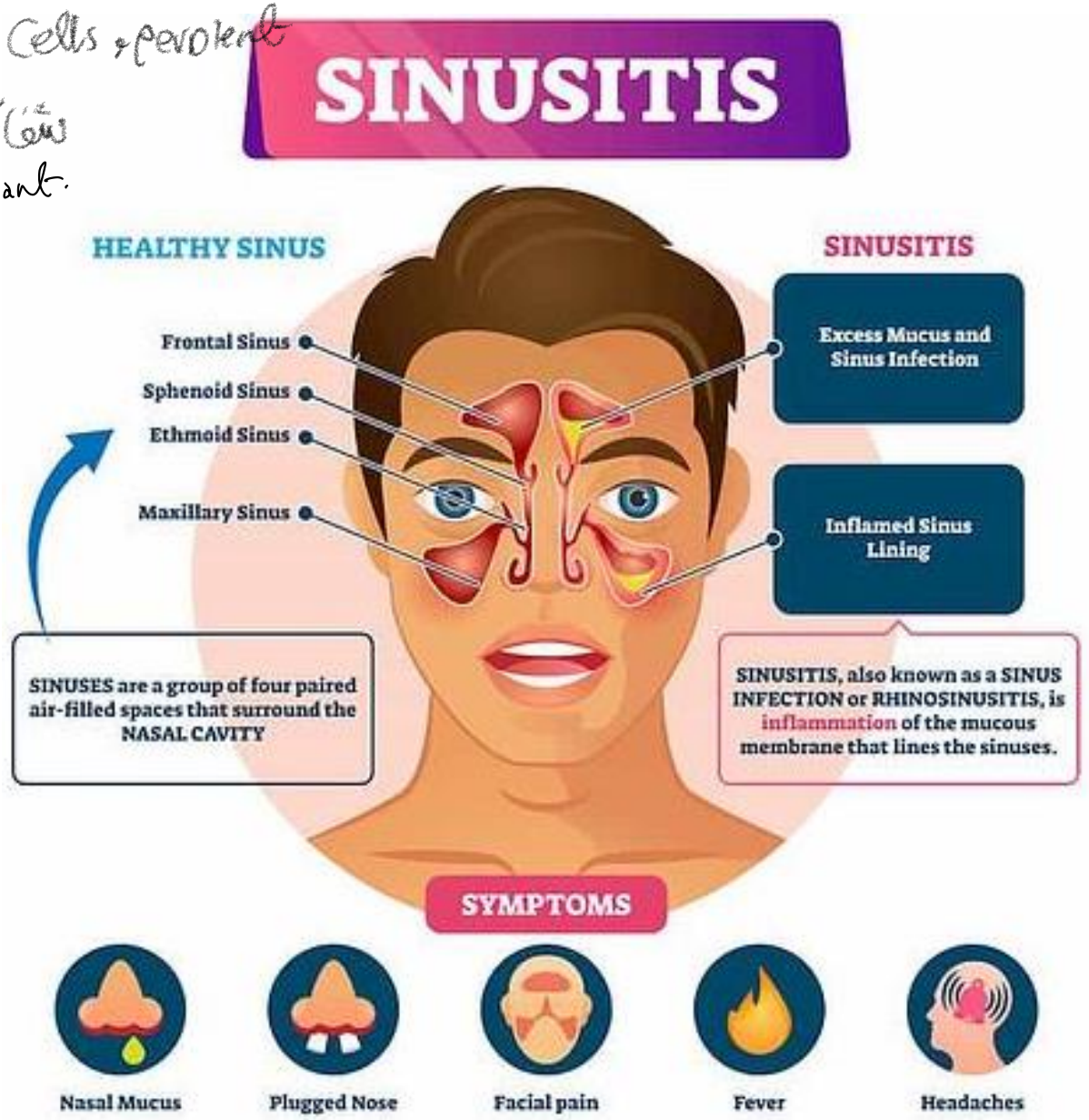
- duration بالاختلاف -

✓ Clinical Presentation:

- Acute rhinosinusitis presents with purulent nasal discharge, nasal obstruction, facial or dental pain, and sinus tenderness with or without fever, lasting < 4 weeks.

pus ← نتيجة تراكم المخاط

- Chronic rhinosinusitis is defined by symptoms lasting > 12 weeks including mucopurulent drainage, nasal obstruction, facial pain or pressure, and decreased sense of smell with documented signs of inflammation.



Secretion → pus (إلى لون صديدي) / persistent- → Rhinosinusitis

ما في ألم بالوجه والاسنان

Secretion → شفاف / transient → Common Cold

في ألم بالوجه والاسنان

important

CLINICAL PRESENTATION — Acute Bacterial Rhinosinusitis

General

- There are three clinical presentations that are most consistent with acute bacterial versus viral rhinosinusitis:
  - Onset with *persistent* signs or symptoms compatible with acute rhinosinusitis, lasting for ≥10 days without any evidence of clinical improvement
  - Onset with *severe* signs or symptoms of high fever (≥39°C [102.2°F]) and purulent nasal discharge or facial pain lasting for at least 3 to 4 consecutive days at the beginning of illness
  - Onset with *worsening* signs or symptoms characterized by new-onset fever, headache, or increase in nasal discharge following a typical viral URI that lasted 5 to 6 days and were initially improving ("double sickening")

episode ← نوبة

لأن الفايروسي ما بطول يا دوب بالكتير أسبوع

Viral → bacterial

Signs and Symptoms

- Purulent anterior nasal discharge, purulent or discolored posterior nasal discharge, nasal congestion or obstruction, facial congestion or fullness, facial pain or pressure, fever, headache, ear pain/pressure/fullness, halitosis, dental pain, cough, and fatigue

لمّا بيكّر الأنف رح تكّر قناة إستاكيوس رح يزيد الضغط والألم ← تراكم سوائل بالأذن ← إلتهاب أذن وسطى

Data from Reference 15.

A diagnosis of acute bacterial rhinosinusitis requires persistent symptoms (≥10 d), severe symptoms at the beginning, worsening of symptoms after 10 days, or worsening after initial improvement.

* التشخيص بعتمد على الـ Signs و الـ Symptoms من الـ History المريض.

✓ Diagnostic Testing:

- Diagnosis requires objective evidence of mucosal disease, usually with rhinoscopy and nasal endoscopy. معلومات أن آخرها من المريض

* ما بزبط Culture

Treatment: إذا باخد عينة من المريض رح يكون مكلف + مؤلم . آخد عينة من الجيوب الأنفية مش الـ Nasal لأن الدراسات شافت ما في توافق.
(لازم أعمل ثقب)

✓ The goals of medical therapy for acute and chronic rhinosinusitis are to:

- Control infection
- Reduce tissue edema
- Facilitate drainage
- ✓ Achieve and maintain patency of the sinus ostia
- Limit antibiotic treatment to those who may benefit
- Break the pathologic cycle that leads to chronic sinusitis

- الهدف من العلاج ، أخفف من الأعراض-

✓ Acute rhinosinusitis:

- Symptomatic treatment is the mainstay of therapy.

- Management of nonbacterial rhinosinusitis (for symptomatic relief):

Atropine ➢ Nasal decongestant spray (use no more than 3 days) Atropine → ممنوع re-bound ممكن يعل

Ezit ➢ Oral decongestants may also aid in nasal/sinus patency (3-5)d أكثر من

➢ Irrigation of nasal cavity with saline & steam inhalation (increase mucosal moisture)

التنفس من الأنف ومسك راسه وبهنفخ فيها → وهو ضاغط فيها سوبها من الأنف

➢ Mucolytics (eg, guaifenesin) may be used to decrease the viscosity of nasal secretions

- Acute bacterial rhinosinusitis;

المخاط أصلاً كتير thick ما بدي أزيد الصلابة. بحالات البكتيريا.

➢ Decongestants & antihistamines: not recommended (can dry mucosa & disturb clearance of mucosal secretions)

➢ Intranasal saline irrigation https://youtu.be/xodfPieoUZU

➢ Intranasal corticosteroids: recommended only for patients with a history of allergic rhinitis.

* يرضه لـ Chronic

first • AAO-HNSF guidelines: watchful waiting, without antibiotics (amoxicillin), unless symptoms fail to improve within 7 days.

ما تحسن بعصبه

* عشان الـ resistant

sec • IDSA guidelines support amoxicillin-clavulanate as first-line treatment, without watchful waiting.

- Empiric antibiotic therapy is indicated only for severe persistent symptoms (≥ 10 days) or failure of symptomatic therapy.
- First-line therapy: amoxicillin-clavulanate (875 mg/ 125 mg PO q12h). No other antibiotics are recommended as first-line for initial empirical therapy.

1 gram

- Doxycycline or a respiratory fluoroquinolone (e.g., moxifloxacin, levofloxacin) may be used as alternative therapy in case of β-lactam allergy or primary treatment failure.

ممنوع doxy الـ عشان للأطفال Levo , Moxiflox أو (3rd generation + Clindamycin)

- TMP-SMX & macrolides: not recommended for empiric therapy (high rates of resistance).
- Cephalosporins are no longer recommended as monotherapy (variable rates of resistance).

x2

- High-dose amoxicillin-clavulanate is preferred in the following situations:

  - Regions of high endemic rates (≥10%) of invasive penicillin-nonsusceptible S. pneumoniae
  - severe infection: systemic toxicity with fever of ≥ 39°C
  - attendance at daycare سبب الاختلاط
  - age less than 2 or greater than 65 years
  - recent hospitalization
  - antibiotic use within the last month
  - immunocompromised persons.

مشاكل كبد أو كلى

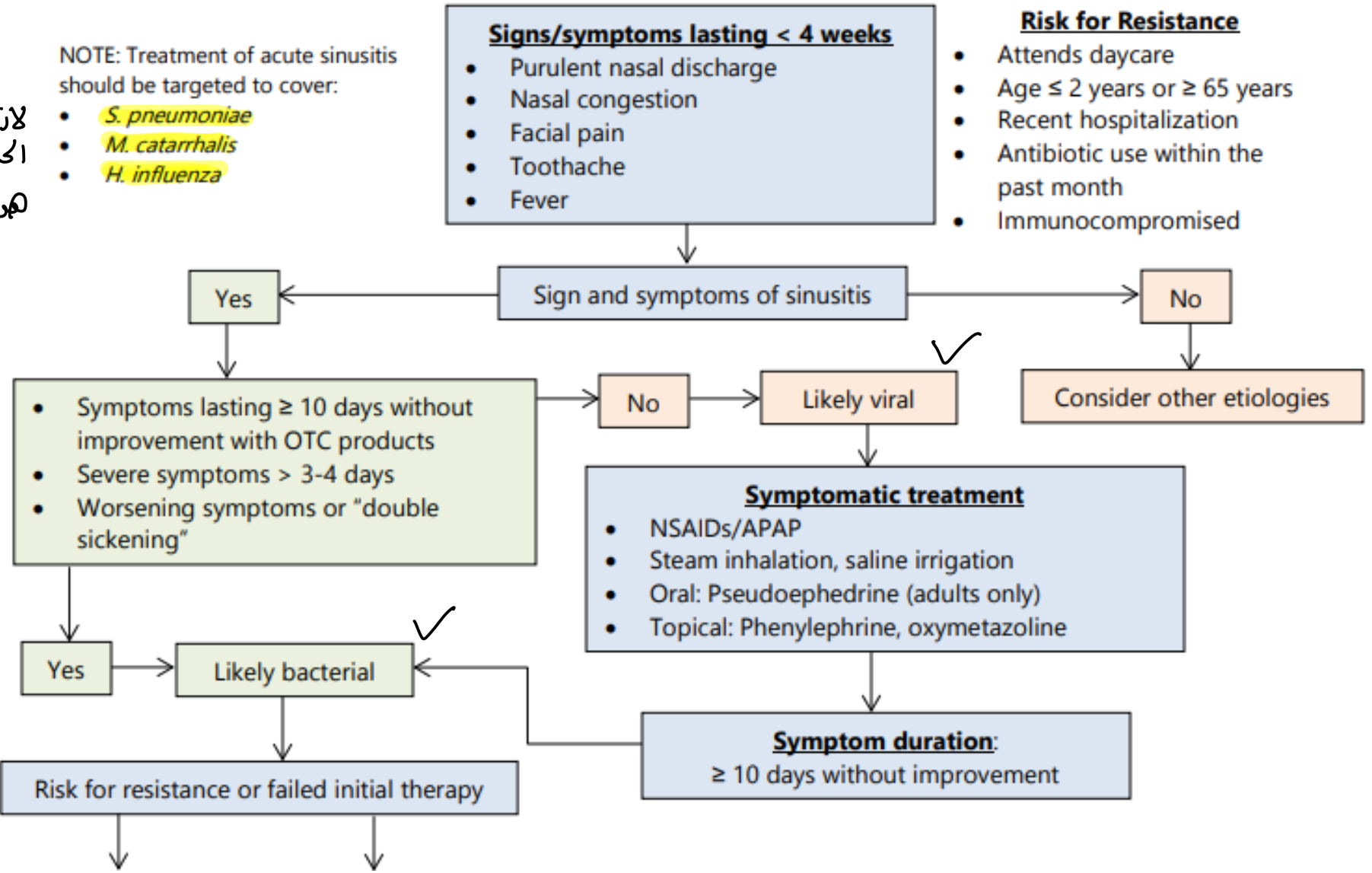
* بزفع الجرعة عشان الرفع جرعة الـ Amoxicillin
لأن المقاومة بتعدها من من الـ β-lactmase
ممكن تكون عاصية تتغير للمكان اللي بتزيد فيه
الـ Amoxicillin

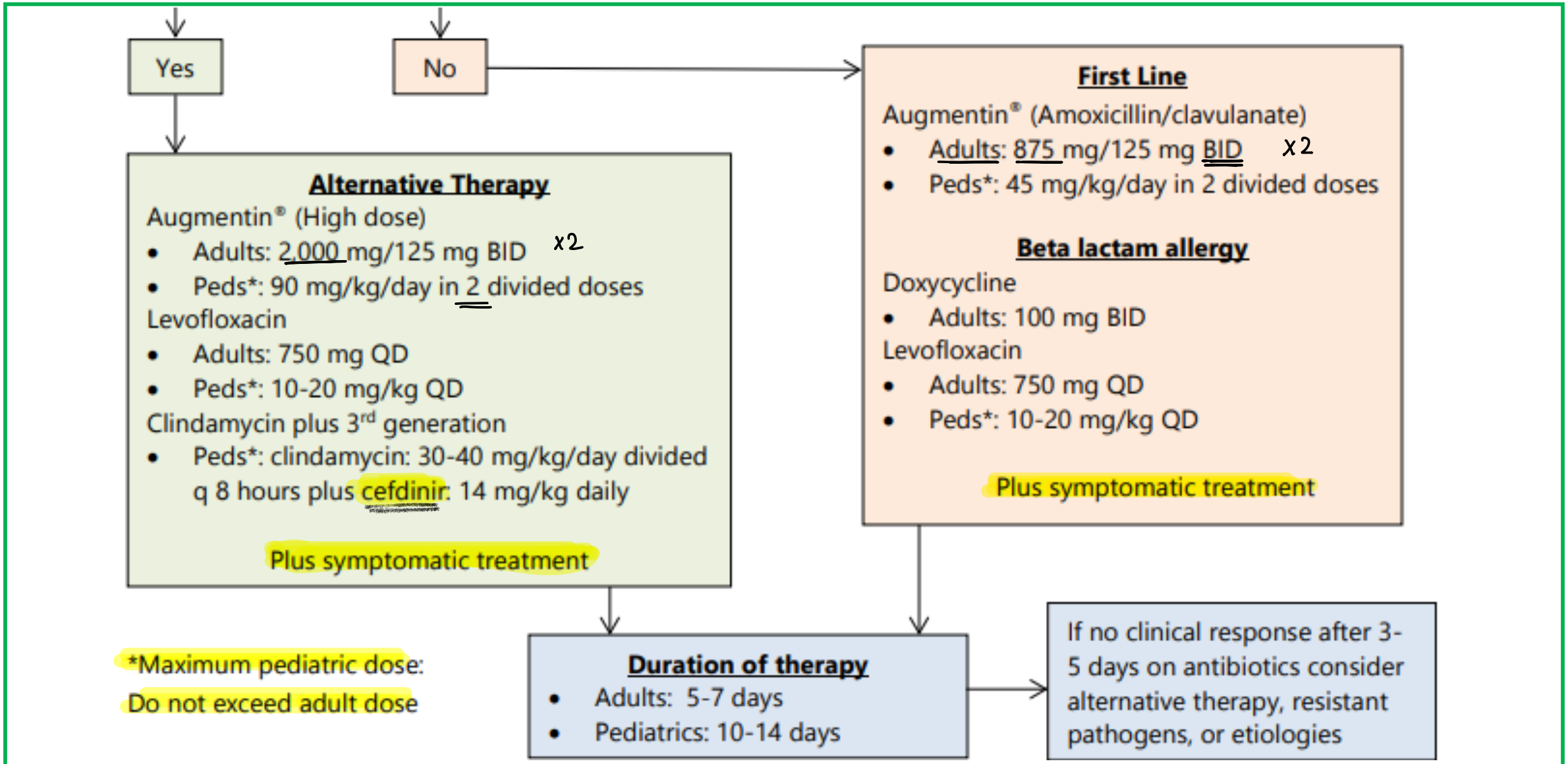
- The duration of therapy (acute bacterial rhinosinusitis) is 10- to 14-day antibiotic courses in children. For adults, the recommended duration is only 5 to 7 days.

- If symptoms persist or worsen after 48 to 72 hours of appropriate antibiotic therapy, then the patient should be reevaluated and alternative antibiotics should be considered.

مش شرط غلط بالـ diagnosis ممكن المريض مش ملتزم أو ما كمّل الكورس.

Acute Sinusitis for Adult and Pediatric Patients Algorithm





Reference: Chow et al. IDSA Clinical Practice Guideline for Acute Bacterial Rhinosinusitis in Children and Adults Clin Infect Dis 2012; 54:e72

- ✓ Chronic rhinosinusitis:
  - Treatment usually includes topical and/ or systemic glucocorticoids.
  - The role of antimicrobial agents is unclear. If they are used, amoxicillin-clavulanate is the first-line treatment, with clindamycin for penicillin-allergic patients.

إذا صارت الأعراض اسوء ← infection جديد

TABLE 126-3 Antibiotics and Doses for Acute Bacterial Rhinosinusitis in Adults

Antibiotic	Brand Name	Dose	Comments
Initial Empirical Therapy			
Amoxicillin-clavulanate	Augmentin®	500 mg/125 mg orally three times daily, or 875 mg/125 mg orally twice daily	First line
Amoxicillin-clavulanate	Augmentin®	2,000 mg/125 mg orally twice daily	Second line
Doxycycline		100 mg orally twice daily or 200 mg orally once daily	Second line
β-Lactam Allergy			
Doxycycline		100 mg orally twice daily or 200 mg orally once daily	
Levofloxacin	Levaquin®	500 mg orally once daily	
Moxifloxacin	Avelox®	400 mg orally once daily	
Risk for Antibiotic Resistance or Failed Initial Therapy			
Amoxicillin-clavulanate	Augmentin®	2,000 mg/125 mg orally twice daily	
Levofloxacin	Levaquin®	500 mg orally once daily	
Moxifloxacin	Avelox®	400 mg orally once daily	
Severe Infection Requiring Hospitalization			
Ampicillin-sulbactam	Unasyn®	1.5-3 g IV every 6 hours	
Levofloxacin	Levaquin®	500 mg orally once daily	
Moxifloxacin	Avelox®	400 mg orally once daily	
Ceftriaxone	Rocephin®	1-2 g IV every 12-24 hours	
Cefotaxime	Claforan®	2 g IV every 4-6 hours	

Data from Reference 15.

TABLE 126-2 Antibiotics and Doses for Acute Bacterial Rhinosinusitis in Children

Antibiotic	Brand Name	Dose	Comments
Initial Empirical Therapy			
Amoxicillin-clavulanate	Augmentin®	45 mg/kg/day orally twice daily	First line
Amoxicillin-clavulanate	Augmentin®	90 mg/kg/day orally twice daily	Second line
β-Lactam Allergy			
Clindamycin plus cefixime or cefpodoxime	Cleocin®, Suprax®, Vantin®	Clindamycin (30-40 mg/kg/day orally three times daily) plus cefixime (8 mg/kg/day orally twice daily) or cefpodoxime (10 mg/kg/day orally twice daily)	Non-type 1 allergy
Levofloxacin	Levaquin®	10-20 mg/kg/day orally every 12-24 hours	Type 1 allergy
Risk for Antibiotic Resistance or Failed Initial Therapy			
Amoxicillin-clavulanate	Augmentin®	90 mg/kg/day orally twice daily	
Clindamycin plus cefixime or cefpodoxime	Cleocin®, Suprax®, Vantin®	Clindamycin (30-40 mg/kg/day orally three times daily) plus cefixime (8 mg/kg/day orally twice daily) or cefpodoxime (10 mg/kg/day orally twice daily)	
Levofloxacin	Levaquin®	10-20 mg/kg/day orally every 12-24 hours	
Severe Infection Requiring Hospitalization			
Ampicillin-sulbactam	Unasyn®	200-400 mg/kg/day IV every 6 hours	
Ceftriaxone	Rocephin®	50 mg/kg/day IV every 12 hours	
Cefotaxime	Claforan®	100-200 mg/kg/day IV every 6 hours	
Levofloxacin	Levaquin®	10-20 mg/kg/day IV every 12-24 hours	

Data from Reference 15.

لحظة تفكُّرية في قوله تعالى

﴿ وَأَن لَّيْسَ لِلْإِنسَانِ إِلَّا مَا سَعَىٰ ﴾

فالإنسان لا يملك إلا سعيه ، لا سعي غيره !

اسعى ولا تفكِّر في النتيجة ، تيقّن بأن لا شيء يضيع عند ربك

﴿ وَأَنَّ سَعْيَهُ سَوْفَ يُرَى ﴾

Artery Academy

Saja Dwaikat