ĐIỀU TRỊ NỘI KHOA
VIÊM MŨI XOANG MẠN

TIẾN SĨ NGUYỄN HOÀNG NAM
BỘ MÔN TAI MŨI HỌNG
ĐẠI HỌC Y DƯỢC TP.HCM

Chronic and recurrent rhinosinusitis definitions

Term	Definition
Chronic rhinosinusitis (CRS)	Twelve (12) weeks or longer of two or more of the following signs and symptoms: • mucopurulent drainage (anterior, posterior, or both) • nasal obstruction (congestion), • facial pain-pressure-fullness, or • decreased sense of smell AND inflammation is documented by one or more of the following findings: • purulent (not clear) mucus or edema in the middle meatus or ethmoid region, • polyps in nasal cavity or the middle meatus, and/or • radiographic imaging showing inflammation of the paranasal sinuses
Recurrent acute rhinosinusitis	Four (4) or more episodes per year of ABRS without signs or symptoms of rhinosinusitis between episodes: • each episode of ABRS should meet diagnostic criteria in Table 5

Acute rhinosinusitis definitions

Term	Definition
Acute rhinosinusitis	Up to 4 weeks of *purulent nasal drainage* (anterior, posterior, or both) accompanied by *nasal obstruction, facial pain-pressure-fullness*, or both: • *Purulent nasal discharge* is cloudy or colored, in contrast to the clear secretions that typically accompany viral upper respiratory infection, and may be reported by the patient or observed on physical examination • *Nasal obstruction* may be reported by the patient as nasal obstruction, congestion, blockage, or stuffiness, or may be diagnosed by physical examination • *Facial pain-pressure-fullness* may involve the anterior face, periorbital region, or manifest with headache that is localized or diffuse
Viral rhinosinusitis (VRS)	Acute rhinosinusitis that is caused by, or is presumed to be caused by, viral infection. A clinician should diagnose VRS when: a. symptoms or signs of acute rhinosinusitis are present less than 10 days and the symptoms are not worsening
Acute bacterial rhinosinusitis (ABRS)	Acute rhinosinusitis that is caused by, or is presumed to be caused by, bacterial infection. A clinician should diagnose ABRS when: a. symptoms or signs of acute rhinosinusitis are present 10 days or more beyond the onset of upper respiratory symptoms, *or* b. symptoms or signs of acute rhinosinusitis worsen within 10 days after an initial improvement (double worsening)

ĐIỀU TRỊ
VIÊM MŨI XOANG MẠN TÍNH

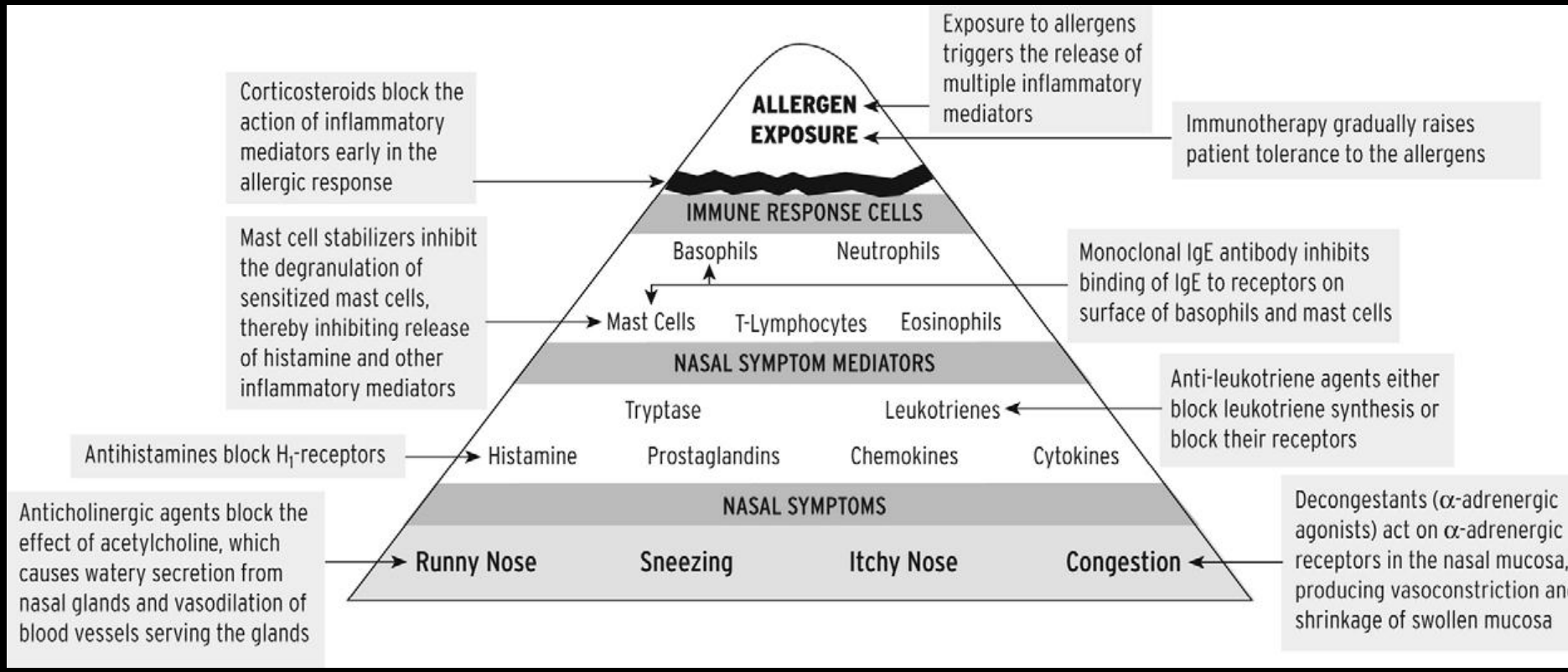
- **ĐT nội khoa hay phẫu thuật?**
- PT NSMX :
  - kết quả tức thì rất tốt,
  - kết qủa lâu dài nhiếu ý kiến khác nhau
  - Đánh giá trên nội soi : tỉ lệ khỏi hoàn toàn chưa cao
- Vai trò ĐTNK
  - ĐTNK đơn thuần
  - ĐTNK trong thời gian phẫu thuật và hậu phẫu
  - ĐTNK sau mổ
- Quan niệm hiện nay : nội khoa + phẫu thuật

NHỮNG YẾU TỐ BỆNH SINH

- Allergic rhinitis,
- Cystic fibrosis,
- Immunocompromised state,
- Ciliary dyskinesia,
- Anatomic variation,
- LPR (GERD)
- .....

MỤC TIÊU CỦA ĐIỀU TRỊ NỘI KHOA

- Mục tiêu : Phục hồi thông khí và dẫn lưu trong xoang
- Điều trị triệu chứng
- Điều trị nguyên nhân : dị ứng, bất thường về GP, miễn dịch, ...


Exposure to allergens triggers the release of multiple inflammatory mediators
Corticosteroids block the action of inflammatory mediators early in the allergic response
Immunotherapy gradually raises patient tolerance to the allergens
ALLERGEN EXPOSURE
IMMUNE RESPONSE CELLS
Basophils
Neutrophils
Mast cell stabilizers inhibit the degranulation of sensitized mast cells, thereby inhibiting release of histamine and other inflammatory mediators
Monoclonal IgE antibody inhibits binding of IgE to receptors on surface of basophils and mast cells
Mast Cells
T-Lymphocytes
Eosinophils
NASAL SYMPTOM MEDIATORS
Tryptase
Leukotrienes
Anti-leukotriene agents either block leukotriene synthesis or block their receptors
Antihistamines block H_1-receptors
Histamine
Prostaglandins
Chemokines
Cytokines
NASAL SYMPTOMS
Anticholinergic agents block the effect of acetylcholine, which causes watery secretion from nasal glands and vasodilation of blood vessels serving the glands
Runny Nose
Sneezing
Itchy Nose
Congestion
Decongestants (α-adrenergic agonists) act on α-adrenergic receptors in the nasal mucosa, producing vasoconstriction and shrinkage of swollen mucosa

Vòng xoáy bệnh lý phát sinh từ tình trạng tắc nghẽn PHLN

CÁC THUỐC THƯỜNG DÙNG

- **Kháng sinh**
- **Kháng viêm**
- **Kháng histamine**
- **Chống nghẹt mũi**
- **Tiêu nhầy**
- **Anticholinergic agents (**ipratropium bromide**)**
- **Mast cell stabilizers** (cromolyn sodium)
- **.....**

Symptom relief by drug class[6,35,36]

	Congestion	Rhinorrhea	Sneezing	Nasal itch	Eye symptoms	Inflammation
Oral antihistamines						
Sedating*	?	+	+	+	+	?
Nonsedating/low-sedating†	?	+	+	+	+	±
Intranasal antihistamines	±	+	+	+	?	±
Decongestants	+	?	?	?	?	?
Intranasal corticosteroids	+	+	+	+	?	+
Oral corticosteroids	+	+	+	±	+	+
Intranasal cromolyn§	±	±	±	±	?	±
Intranasal anticholinergics	?	+	?	?	?	?
Anti-leukotreine agents	+	+	±	±	±	+

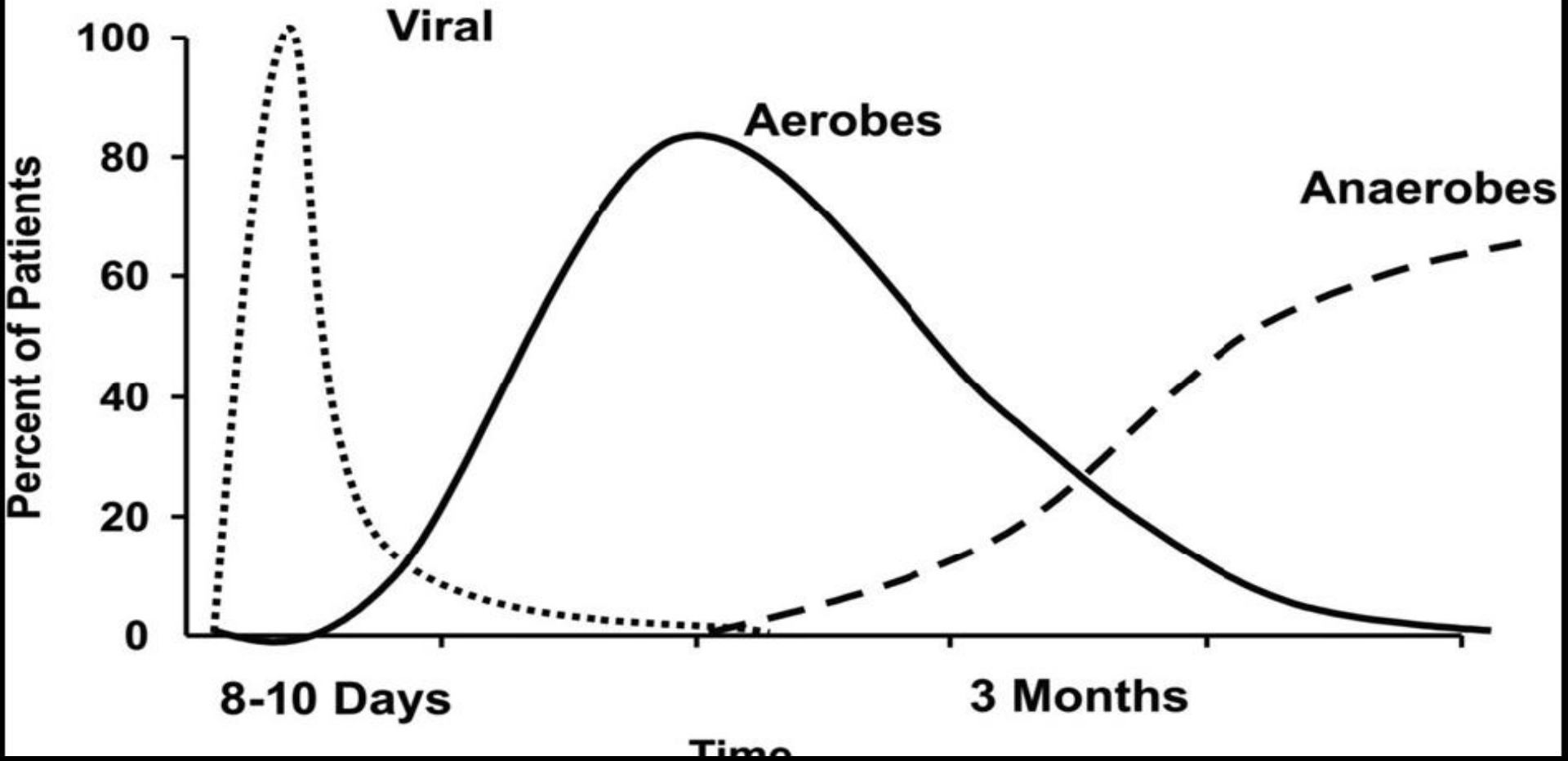
+, significant benefit; ?, questionable benefit; ±, mild benefit or current ongoing studies.

*Sometimes referred to as first-generation antihistamines.
†Sometimes referred to as second-generation antihistamines.
§Effect on symptoms when initiated prior to allergen exposure.

VI TRÙNG TRONG VMX MẠN

- Khác VMX cấp : kỵ khí, S. aureus, M. catarrhalis, Haemophilus spp và P. Aeruginosa.
- Chuyển dịch sang kỵ khí
- Đa nhiễm khuẩn
- Tỉ lệ kháng thuốc ngày càng tăng

Viral and Bacterial Causes of Otitis and Sinusitis



CHỌN KHÁNG SINH

- **Chọn KS có hiệu quả chống lại cả hiếu khí và kỵ khí sinh men beta lactamase :**
  - **penicillin (e.g. amoxycillin) + a beta-lactamase inhibitor (e.g. clavulanic acid),**
  - **clindamycin,**
  - **Metronidazole + penicillin or macrolide,**
  - **'newer' quinolones (e.g. trovafloxacin)**
- **Chống P. Aeruginosa : aminoglycoside, a fourth-generation cephalosporin (cefepime or ceftazidime) or fluoroquinolone**
- **Thời gian : 21 ngày (10 tuần)**

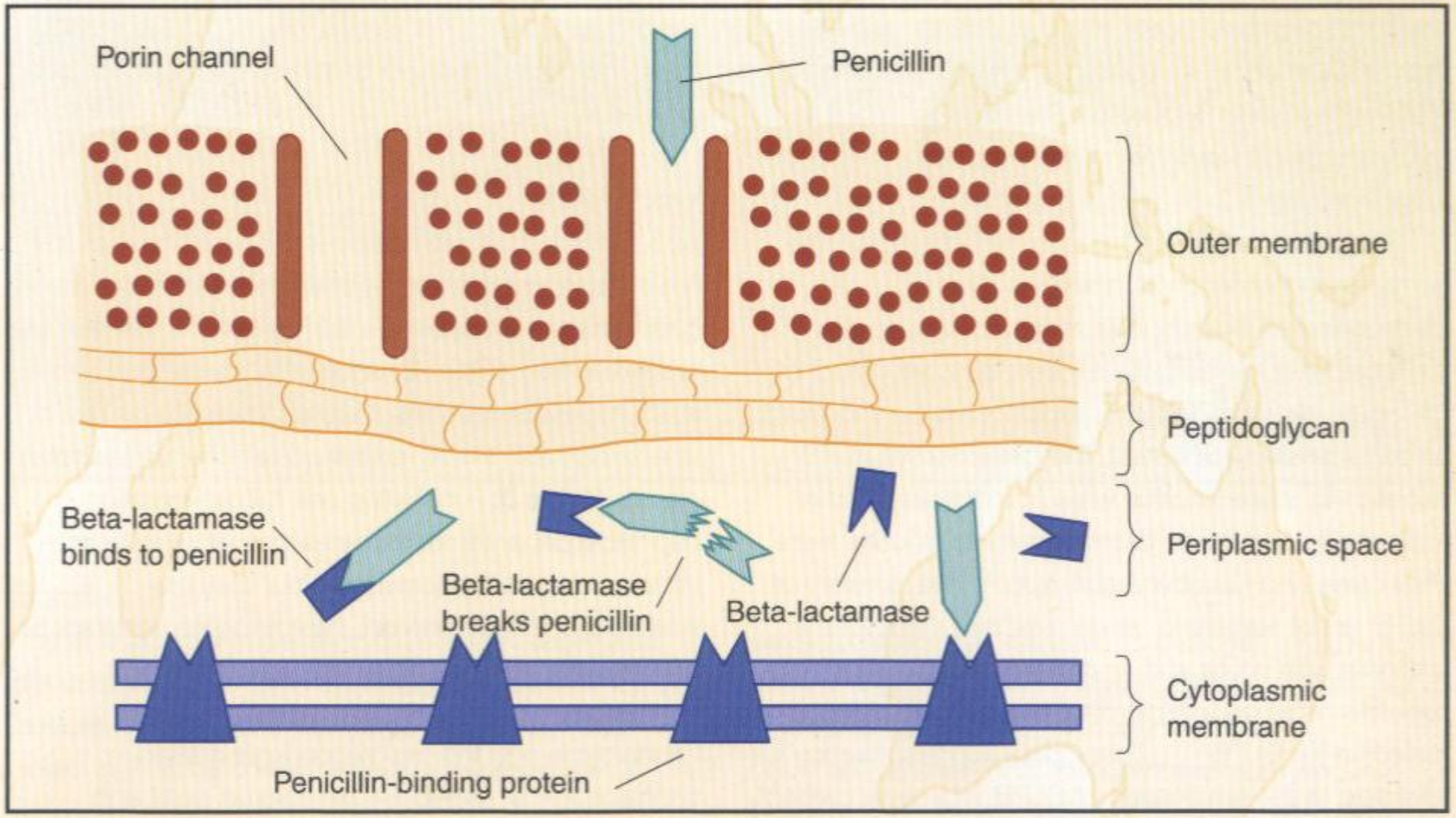
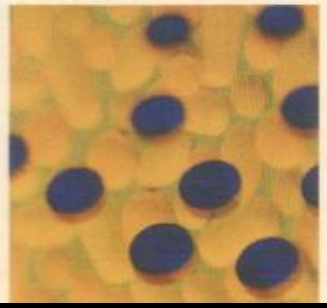


Figure 1 Sites for penicillin resistance in the outer membrane and cytoplasmic membrane of Gram-negative bacteria.



CORTICOSTEROID

Table 13–4 Relative Potencies of Glucocorticoids

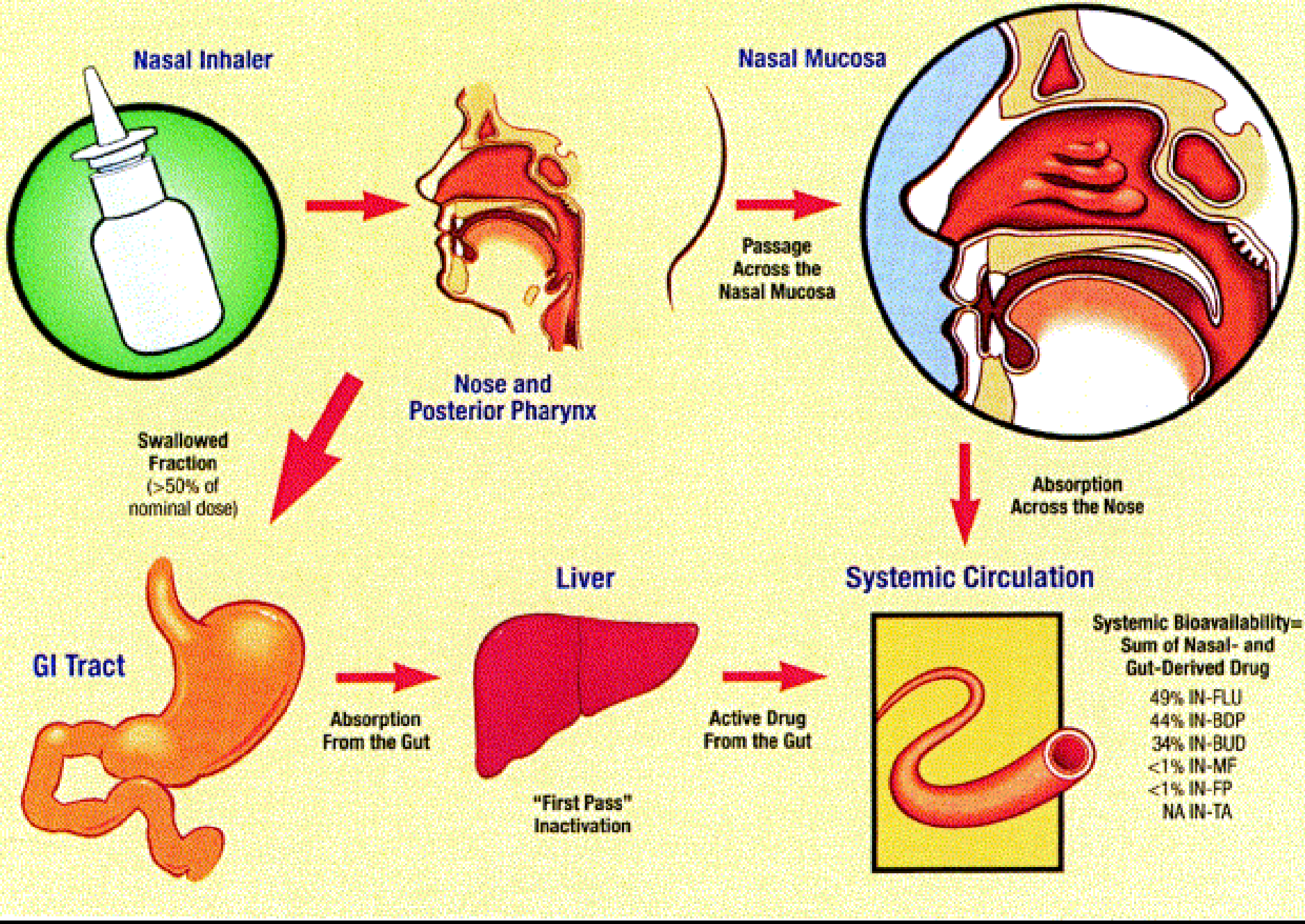
Preparation	*Potency Relative to Hydrocortisone*	*Relative Sodium-Retaining Potency*	*Equivalent Dose (mg)*	*Duration of Action*
Hydrocortisone	1	1	20	Short
Cortisone	0.8	0.8	25	Short
Prednisone	4	0.8	5	Intermediate
Prednisolone	4	0.8	5	Intermediate
6α-Methylprednisolone	5	0.5	4	Intermediate
Triamcinolone	5	0	4	Intermediate
Dexamethasone	25	0	0.75	Long
Betamethasone	25	0	0.75	Long

Systemic corticosteroids Prednisone Methylprednisolone	↓ nasal congestion ↓ pruritus ↓ sneezing ↓ rhinorrhea Most effective class in controlling symptoms of allergic rhinitis, particularly more severe forms Last resort when other therapies prove ineffective Reach all parts of the nose and paranasal sinuses vs intranasal corticosteroids	Oral formulation safe for short-term use Parenteral corticosteroid use discouraged because of side effects (eg, hypothalamic-pituitary-adrenal [HPA] axis suppression)	A short oral course (3-7 days) may be appropriate to treat patients with severe symptoms or to control symptom exacerbations Should be used judiciously in children due to concerns about effects on growth

CORTICOID TẠI CHỖ

- Dexamethasone, 1967, ngưng dùng
- Beclomethasone dipropionate,1974
- Flunisolide ,1976
- Budesonide ,1980
- Fluticasone propionate
- Triamcinolone acetonide
- Momethasone furoate

The Fate of Intranasal Steroids

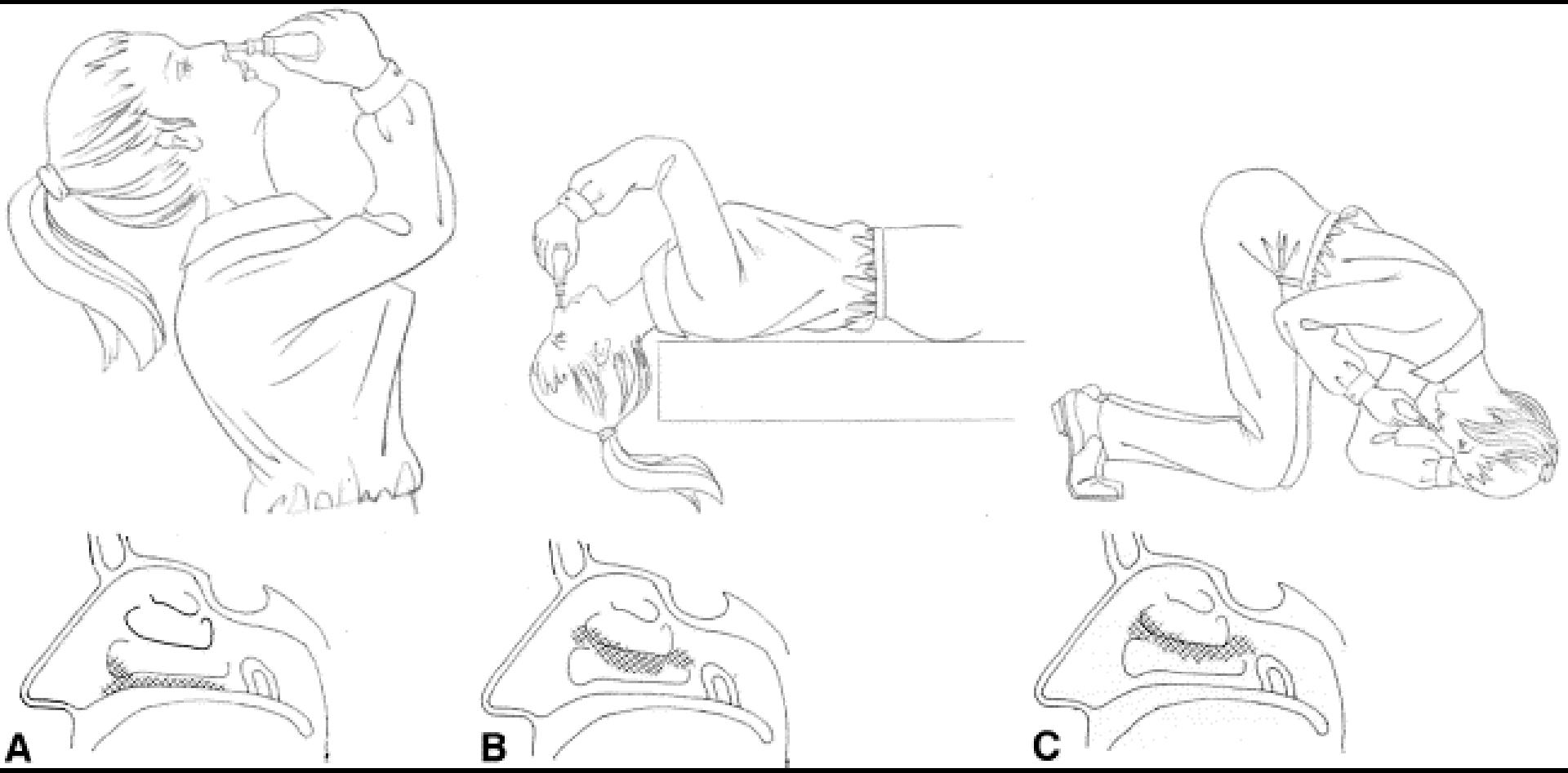


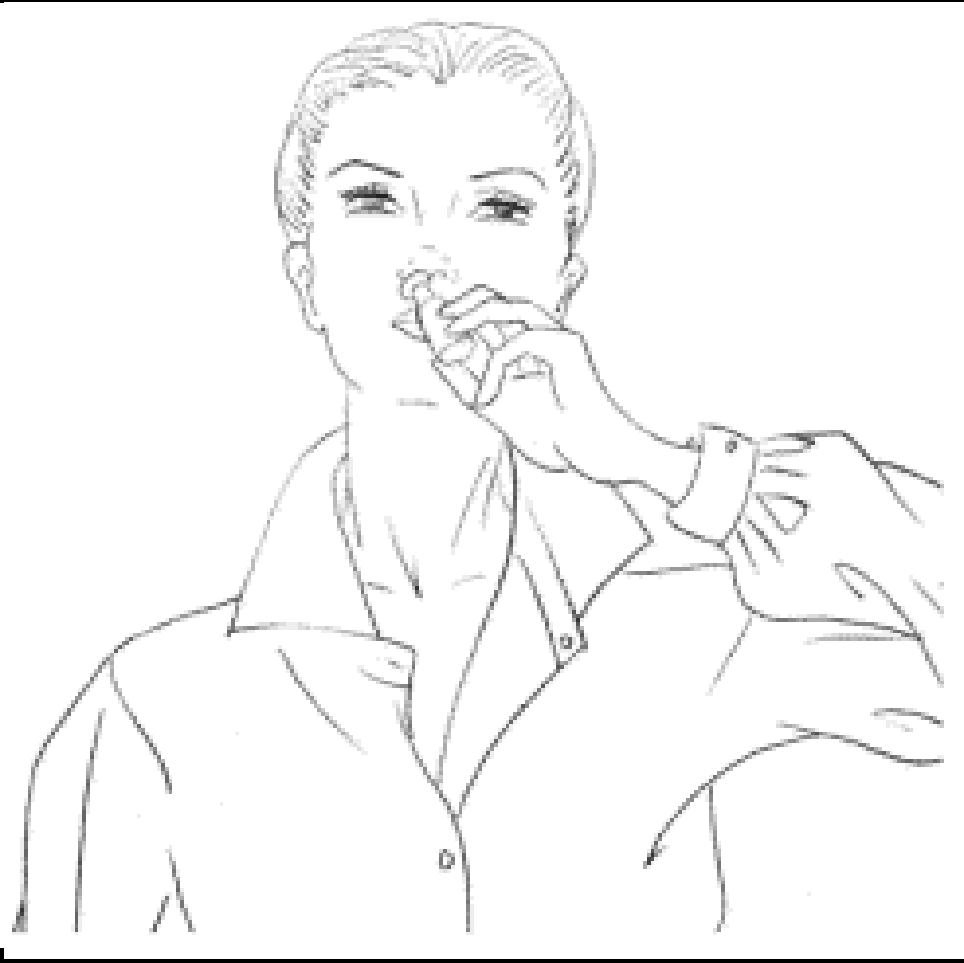
CHỌN CORTICOID TẠI CHỖ

- Khả năng tác dụng tại chỗ (fluticasone propionate và mometasone furoate)
- Khả năng tan trong mỡ (fluticasone propionate và mometasone furoate)
- Tác dụng toàn thân ít (fluticasone propionate và mometasone furoate)
- Phản ứng tại chỗ
- Tuổi
- Gía thành

Table. Dosage and administration schedules for commonly used intranasal steroid preparations

Corticosteroid/ trade names	Dosage and administration			Intranasal bioavailability
Beclomethasone				Unknown
Beconase AQ®, 42 µg per spray	1-2 sprays/nostril twice daily	168 to 336 µg/d	Adults and children 6 yrs and older	
Vancenase 84AQ®, 84 µg per spray	1 or 2 sprays/nostril daily	168 to 336 µg/d	Adults and children 6 yrs and older	
Flunisolide				40% - 50%
Nasalide® /Nasarel®, 25 µg per spray	2 sprays/nostril twice daily or	200 µg/d	Adults 15 yrs and older	
	2 sprays/nostril 3 times daily	300 µg/d		
	1 spray/nostril 3 times daily or	150 µg/day	Children 6 to 14 yrs	
	2 sprays/nostril twice daily	200 µg/d		
Budesonide				20%
Rhinocort®, 32 µg per spray	2 sprays/nostril twice daily or 4 sprays/nostril daily	256 µg/d	Adults and children 6 yrs and older	
Fluticasone				0.5%-2%
Flonase®, 50 µg per spray	2 sprays/nostril daily	200 µg/d	Adults and children 12 yrs and older	
	1-2 sprays/nostril daily	100 to 200 µg/d	Children 4 to 11 yrs	
Triamcinolone				Unknown
Nasacort®, 55 µg per spray	2 or 4 sprays/nostril daily	220 to 440 µg/d	Adults and children 12 yrs and older	
	2 sprays/nostril daily	220 µg/d	Children 6 to 11 yrs	
	2 sprays/nostril daily	220 µg/d	Adults and children 12 yrs and older	
Nasacort AQ®, 55 µg per spray	1-2 sprays/nostril daily	110-220 µg/d	Children ages 6-12 yrs	
Mometasone				0.1%
Nasonex®,	2 sprays/nostril daily 50 mg per spray	200 µg/d	Adults and children 12 yrs and older	


A
B
C

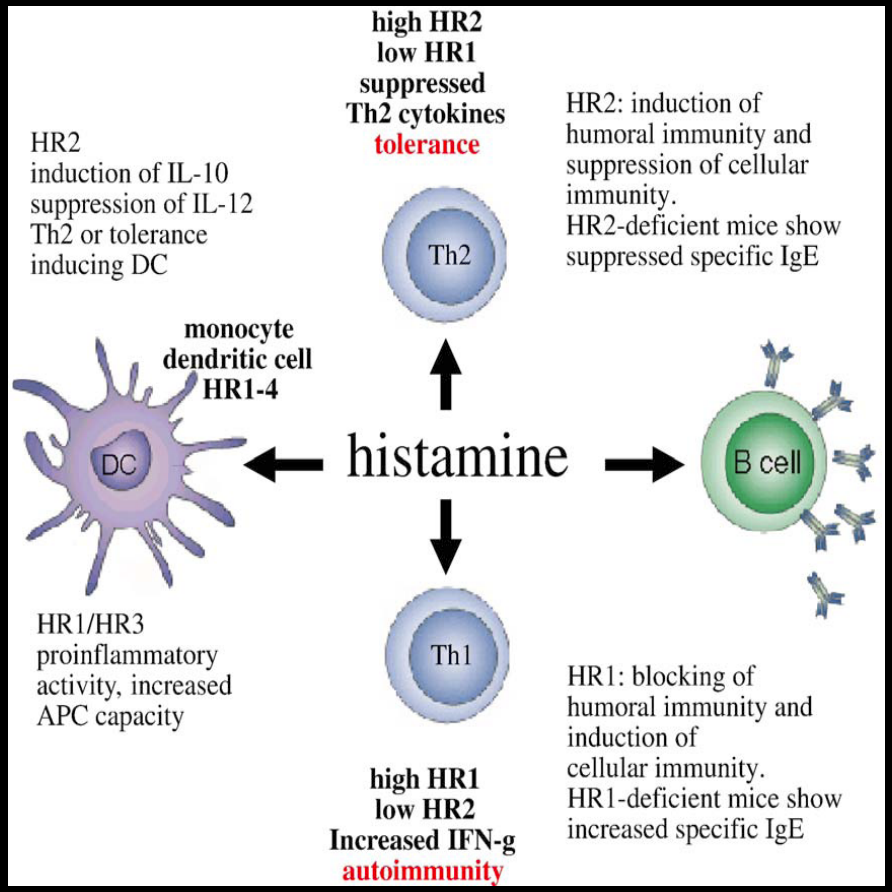


Intranasal corticosteroids Beclomethasone (Beconase) Budesonide (Rhinocort) Flunisolide (Nasarel, Nasalide) Fluticasone (Flonase) Mometasone (Nasonex) Triamcinolone (Nasocort)	↓ nasal congestion ↓ pruritus ↓ sneezing ↓ rhinorrhea Most effective class in controlling symptoms of allergic rhinitis, particularly more severe forms Time to onset of effect (up to 12 hours) and to maximum effect (days to weeks) is longer than with other classes	Nasal irritation, stinging, burning, dryness, bleeding, epistaxis, altered smell/taste Systemic adverse events less likely than with an oral/parenteral formulation	Pretreatment with a decongestant may be necessary to open nasal airway for delivery of these drugs Septal perforation is rare; spray away from the nasal septum Should be used judiciously in children due to concerns about effects on growth Use in pregnant women should be considered carefully Must be administered regularly, even in the absence of symptoms, to maintain efficacy

DECONGESTANT

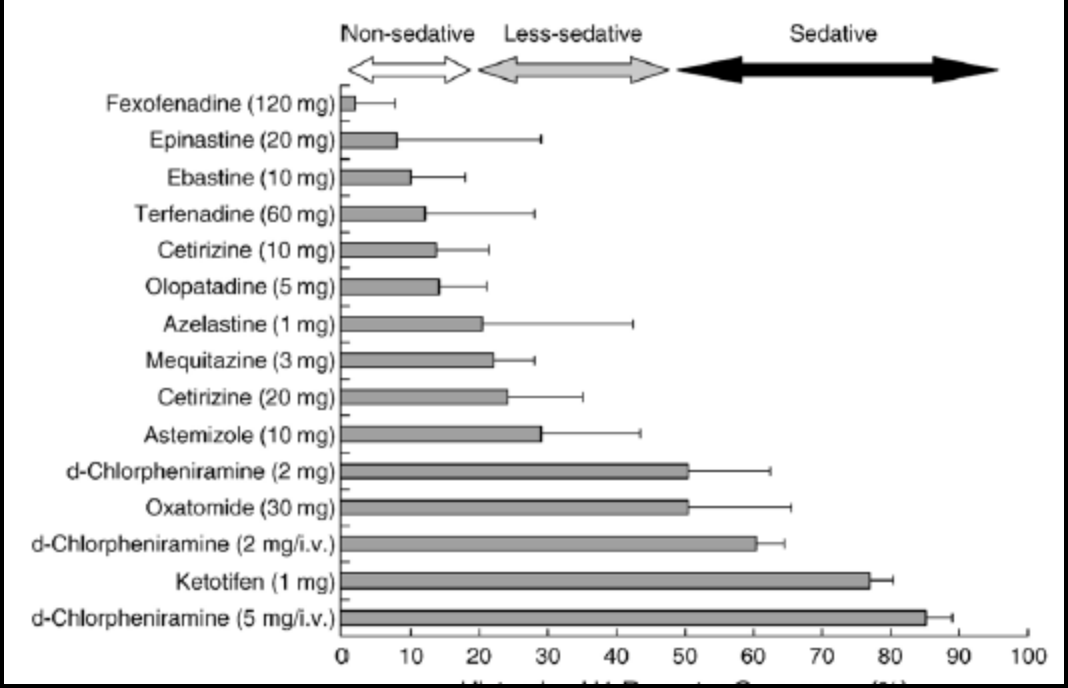
- α-adrenergic agonists: co mạch máu dưới niêm mạc mũi ⇨ giảm cấp máu, giảm phù nề, giảm trở kháng mũi và mở rộng lỗ thông xoang
- Tại chỗ : 4 – 7 ngày
- Toàn thân : pseudoephedrine và phenylephrine.
- Rhinitis medimencatosa và drug-induced rhinitis

Oral/intranasal decongestants Oral agents: Pseudoephedrine Phenylephrine Intranasal agents: Ephedrine Epinephrine Phenylephrine Oxymetazoline Xylometazoline Tetrahydrozoline	↓ nasal congestion No effect on itching, sneezing, or nasal discharge The onset of activity with topical (intranasal) agents is more rapid than with oral agents	Oral agents: Nervousness, excitability, restlessness, dizziness, insomnia CV effects, including elevated blood pressure, palpitations, tachycardia, arrhythmias Intranasal agents: - burning, stinging, sneezing, local dryness - rhinitis medicamentosa after 5-10 days of treatment	Use with caution in patients with arrhythmias, angina, hypertension, hyperthyroidism, glaucoma, diabetes, and urinary problems Intranasal decongestants better for short-term relief (2-3 h) Oral agents effective when used in combination with antihistamines (eg, Allegra-D, Claritin D, Zyrtec-D)


high HR2
low HR1
suppressed
Th2 cytokines
tolerance
HR2
induction of IL-10
suppression of IL-12
Th2 or tolerance
inducing DC
HR2: induction of
humoral immunity and
suppression of cellular
immunity.
HR2-deficient mice show
suppressed specific IgE
Th2
monocyte
dendritic cell
HR1-4
DC
histamine
B cell
HR1/HR3
proinflammatory
activity, increased
APC capacity
Th1
HR1: blocking of
humoral immunity and
induction of
cellular immunity.
HR1-deficient mice show
increased specific IgE
high HR1
low HR2
Increased IFN-g
autoimmunity

ANTIHISTAMINES H1

Nhiều tiềm năng


Non-sedative
Less-sedative
Sedative
Fexofenadine (120 mg)
Epinastine (20 mg)
Ebastine (10 mg)
Terfenadine (60 mg)
Cetirizine (10 mg)
Olopatadine (5 mg)
Azelastine (1 mg)
Mequitazine (3 mg)
Cetirizine (20 mg)
Astemizole (10 mg)
d-Chlorpheniramine (2 mg)
Oxatomide (30 mg)
d-Chlorpheniramine (2 mg/i.v.)
Ketotifen (1 mg)
d-Chlorpheniramine (5 mg/i.v.)
0
10
20
30
40
50
60
70
80
90
100

Pharmacologic therapy for rhinitis[6,32-34]

Class of medication	Clinical efficacy	Side effects	Other issues/comments
Oral antihistamines (OA) (1st generation) Diphenhydramine† (Benadryl) Hydroxyzine† (Atarax, Vistaril) Chlorpheneramine†	↓ pruritus ↓ sneezing ↓ rhinorrhea ↔ nasal congestion ↓ ocular symptoms of allergic conjunctivitis	Sedation Motor and cognitive performance impairment, even without obvious sedation Blurred vision, dry mouth, urinary retention, constipation Decreased work/school performance	In most states, patients taking these drugs are legally "under the influence of drugs"; caution in driving Patients don't perceive their own performance impairment Although effective on a PRN basis, most effective when taken 2-5 hours before allergen exposure or on a regular basis
Oral antihistamines (2nd generation) Loratadine (Claritin) Cetirizine (Zyrtec) Fexofenadine (Allegra) Desloratadine (Clarinex) Acrivastine, with pseudoephredrine (Semprex-D)	Same benefits as 1st-generation oral antihistamines	Older 2nd-generation agents (ie, terfenadine, astemizole) caused QTc prolongation and arrhythmias, causing them to be removed from the U.S. market Cetirizine causes minimal sedation	More expensive than 1st-generation agents 2nd- vs 1st-generation agents mandated in some segments of transportation industry Excluding cetirizine and fexofenadine, agents undergo hepatic metabolism via CYP450, making drug-drug interaction with other CYP450 metabolized agents possible Although effective on a PRN basis, most effective when taken 2-5 hours before allergen exposure or on a regular basis
Intranasal antihistamines Azelastine (Astelin)	↓ nasal congestion ↓ itching ↓ sneezing ↓ rhinorrhea	Bitter taste (20%) Sedation (11%)	

TIÊU NHẦY

- Guaifenesin liều cao 2,400mg/ngày : không chứng minh được
- Nước muối : ưu trương có hiệu quả

CÁC THỦ THUẬT THƯỜNG DÙNG

- Chọc xoang
- Proëtz
- Bẻ và đốt cuốn

ĐIỀU TRỊ HỖ TRỢ

- Xông hơi : giảm nghẹt và khô mũi
- Rửa mũi : được đề nghị
- Tập thể dục : được đề nghị
- Thay đổi môi trường : được đề nghị
- Dinh dưỡng : vitamine và nguyên tố vi lượng

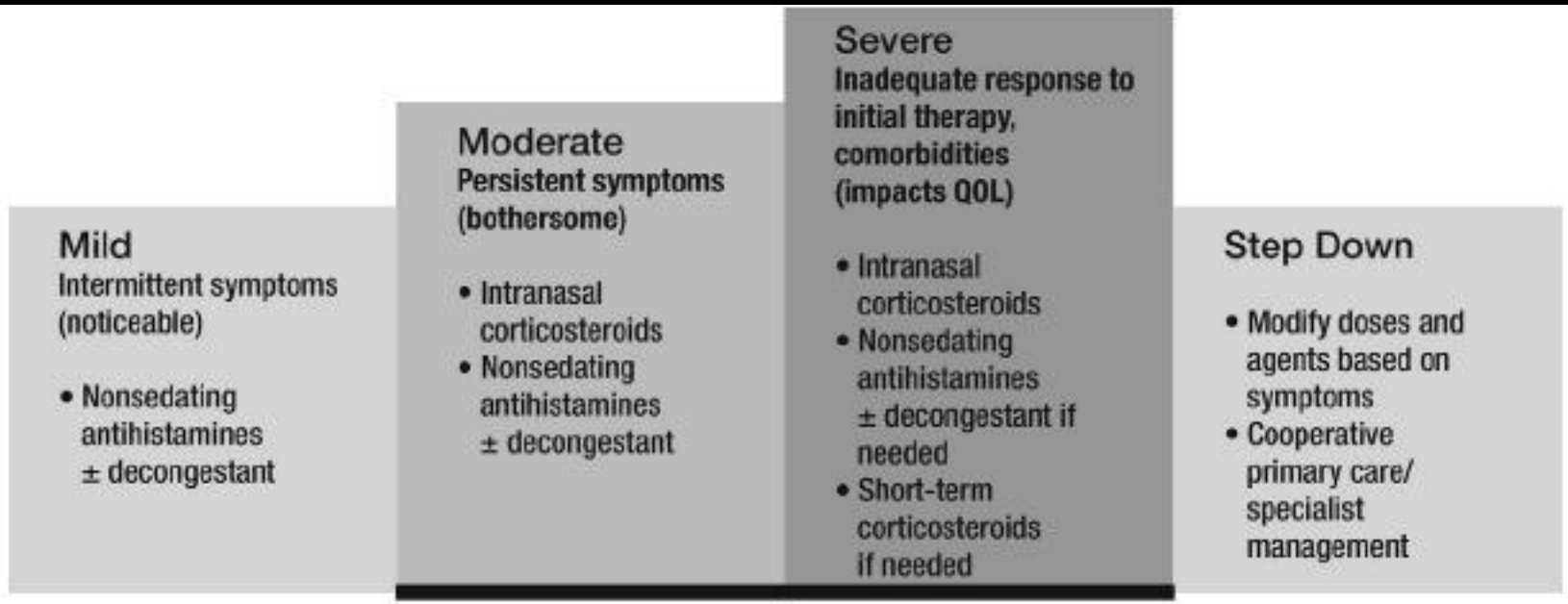
ĐIỀU TRỊ NỘI KHOA TÍCH CỰC

- **Tranh cãi và chưa thống nhất**
- **Bao gồm**
  - **KS (cấy) : 3 – 4 tuần**
  - **Topical nasal steroids : liên tục**
  - **Topical decongestants : 3 to 5 days**
  - **Oral decongestants : nếu bệnh nhân dung nạp tốt**
  - **Oral steroids : ngắn ngày**
  - **Kháng histamine**
  - **Hỗ trợ : khuyến kích**

ĐIỀU TRỊ NỘI KHOA TƯƠNG LAI

- KS XỊT
- INTERLEUKIN
- LIỆU PHÁP GENE
- THUỐC MỚI

ĐIỀU TRỊ NGUYÊN NHÂN

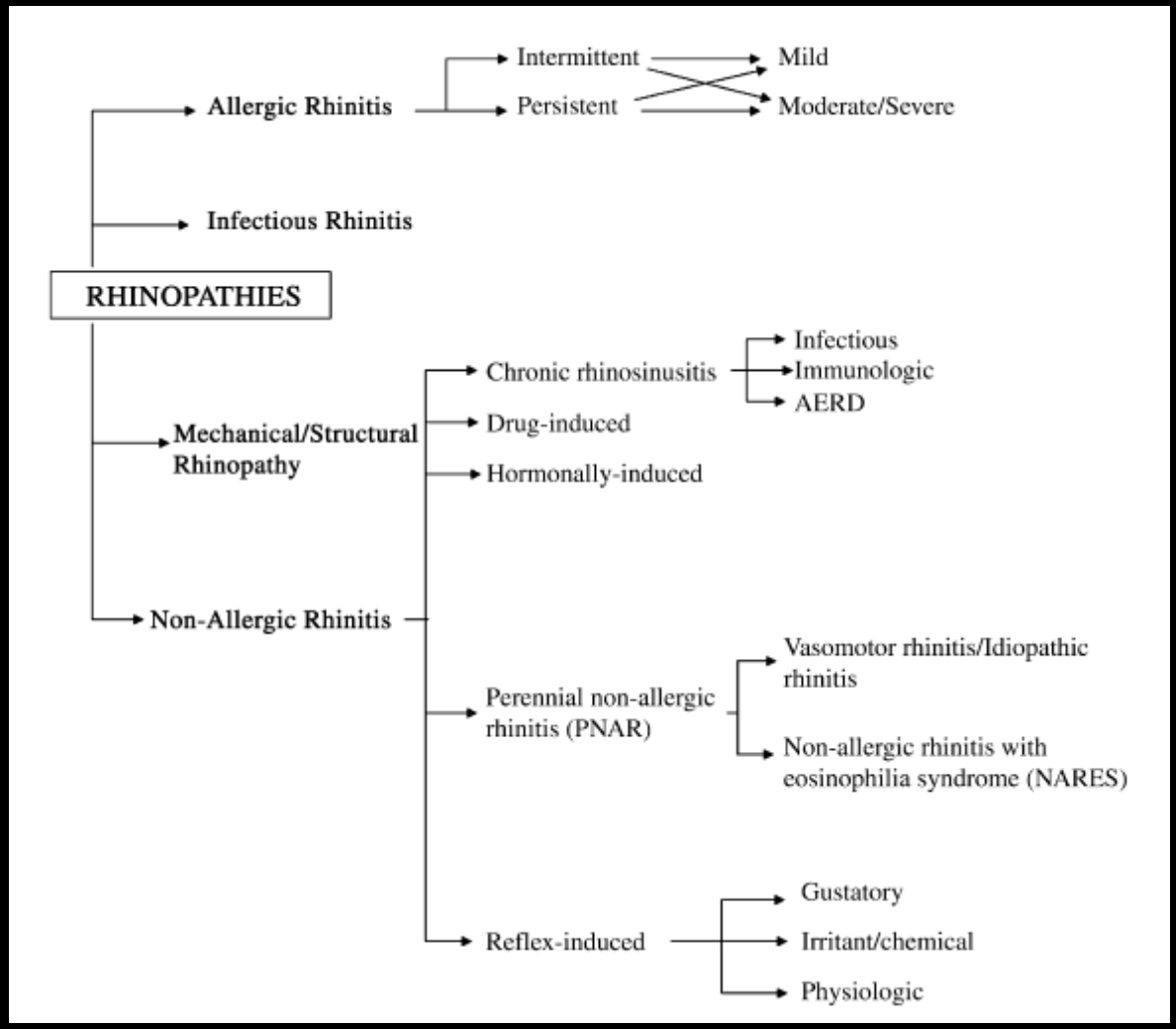


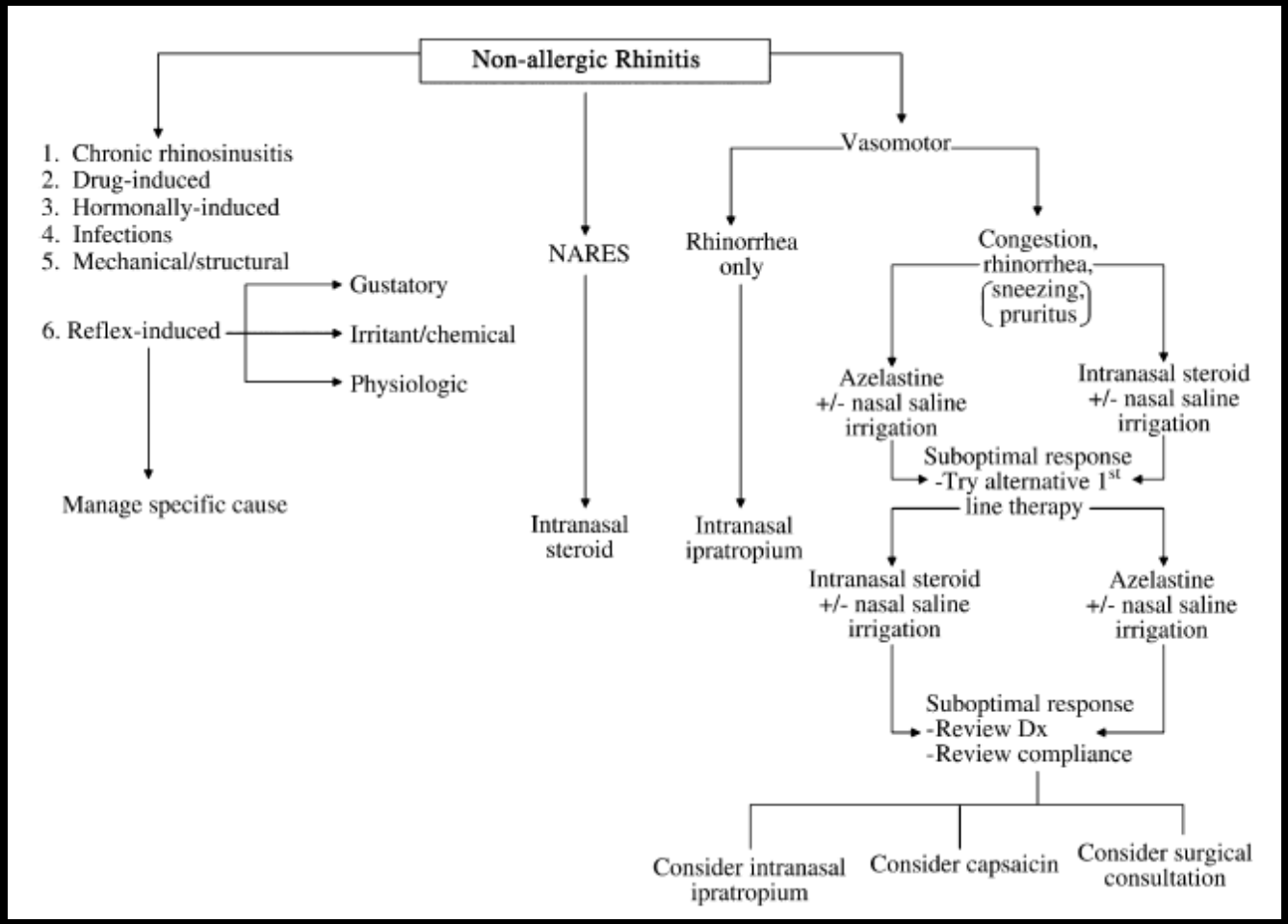
Considerations for Consultation With Specialist

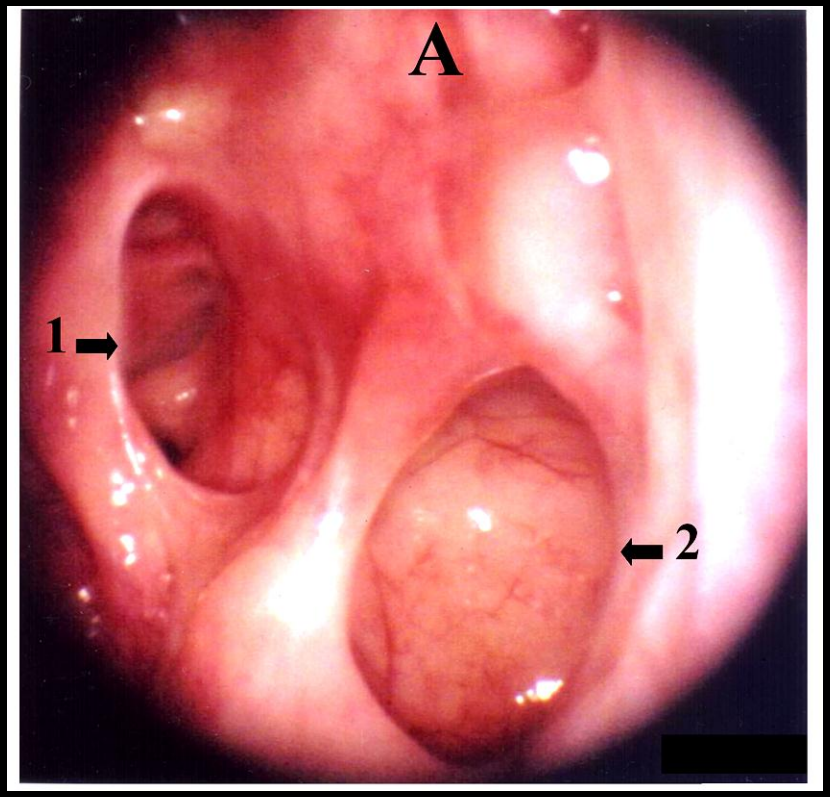
- Symptoms prolonged
- Symptoms interfere with daily activities, sleep (QOL)
- Suboptimal responses to medications
- Comorbid conditions (asthma, sinusitis, otitis media)
- Structural abnormalities
- Allergic triggers need to be identified
- Immunotherapy to be considered
- Oral steroids required

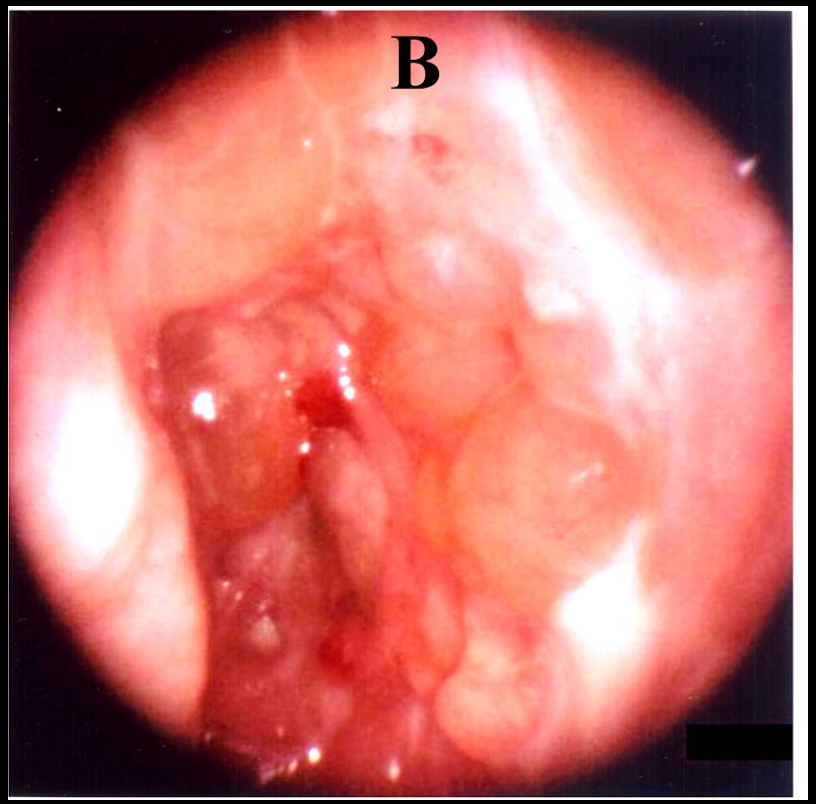
Mast cell stabilizers Cromolyn (Nasalcrom)	Prevents allergic reaction (does not alleviate symptoms once the reaction has begun) ↓ pruritus ↓ sneezing ↓ rhinorrhea ↔ nasal congestion Generally less effective than intranasal corticosteroids	Because of its favorable safety profile, it should be considered in children and pregnant women Side effects include: sneezing (10%), nasal stinging or burning (5%), nasal irritation (<3%), and epistaxis (<1%)	Protective effect lasts 4-8 hours; requires multiple doses each day Effect usually noted in 4-7 days, but can take 2 weeks or more for maximum effect Pretreatment with a decongestant may be necessary to open nasal airway for delivery of cromolyn Appropriate patient selection is critical; best for those whose exposure can be anticipated and those with high serum IgE levels
Oral anti-leukotriene agents Montelukast (Singulair)	Has indication for allergic rhinitis in patients 2 years of age and older ↓ nasal congestion ↔ pruritus ↓ sneezing ↓ rhinorrhea No more effective than 2nd-generation (nonsedating) antihistamines, and less effective than intranasal corticosteroids	Side effect profile similar to placebo in placebo-controlled studies	New cases of Churg-Strauss syndrome (vasculitic angiitis), primarily in asthmatics Extensively metabolized by CYP 3A4 and 2C9, with an associated potential for drug-drug interactions
Intranasal anticholinergics Ipratropium (Atrovent)	↓ rhinorrhea No effect on any other symptoms of rhinitis	Minimal side effects (dose related) including: nasal dryness, burning, and irritation; bloody nasal discharge	Use in combination with intranasal corticosteroid or antihistamine in patients with rhinorrhea as the predominant symptom or for those with rhinorrhea who are not fully responsive to other therapies

Immunotherapy	Most appropriate for patients with IgE-mediated rhinitis and severe symptoms from exposure to a well-defined and unavoidable allergen(s) Potential for long-term prevention of allergic rhinitis and the development of lower airway disease	Acute anaphylactic reaction	Frequent office visits; compliance is essential for efficacy Relatively expensive

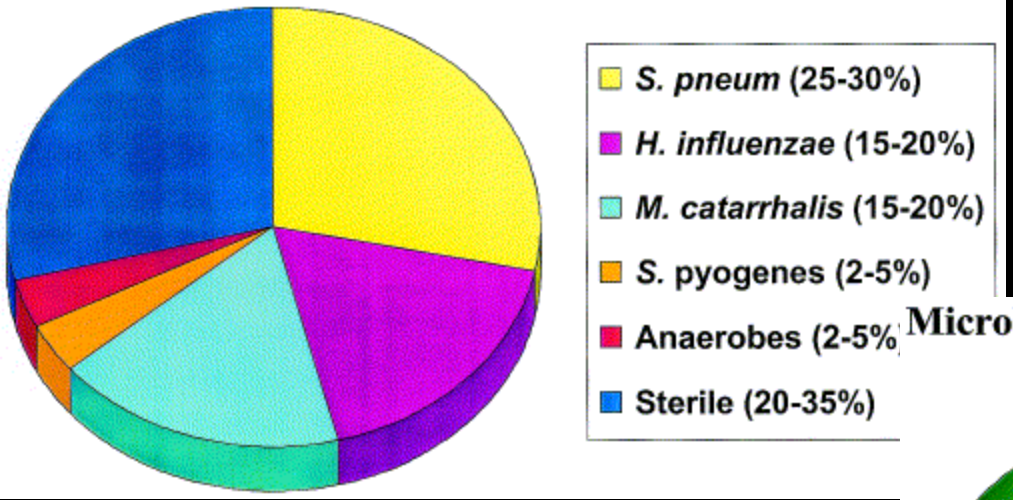

RHINOPATHIES
Allergic Rhinitis
Intermittent
Persistent
Mild
Moderate/Severe
Infectious Rhinitis
Mechanical/Structural Rhinopathy
Chronic rhinosinusitis
Infectious
Immunologic
AERD
Drug-induced
Hormonally-induced
Non-Allergic Rhinitis
Perennial non-allergic rhinitis (PNAR)
Vasomotor rhinitis/Idiopathic rhinitis
Non-allergic rhinitis with eosinophilia syndrome (NARES)
Reflex-induced
Gustatory
Irritant/chemical
Physiologic


Non-allergic Rhinitis
1. Chronic rhinosinusitis
2. Drug-induced
3. Hormonally-induced
4. Infections
5. Mechanical/structural
6. Reflex-induced
Gustatory
Irritant/chemical
Physiologic
Manage specific cause
NARES
Intranasal steroid
Vasomotor
Rhinorrhea only
Intranasal ipratropium
Congestion, rhinorrhea, (sneezing, pruritus)
Azelastine +/- nasal saline irrigation
Intranasal steroid +/- nasal saline irrigation
Suboptimal response -Try alternative 1st line therapy
Intranasal steroid +/- nasal saline irrigation
Azelastine +/- nasal saline irrigation
Suboptimal response -Review Dx -Review compliance
Consider intranasal ipratropium
Consider capsaicin
Consider surgical consultation

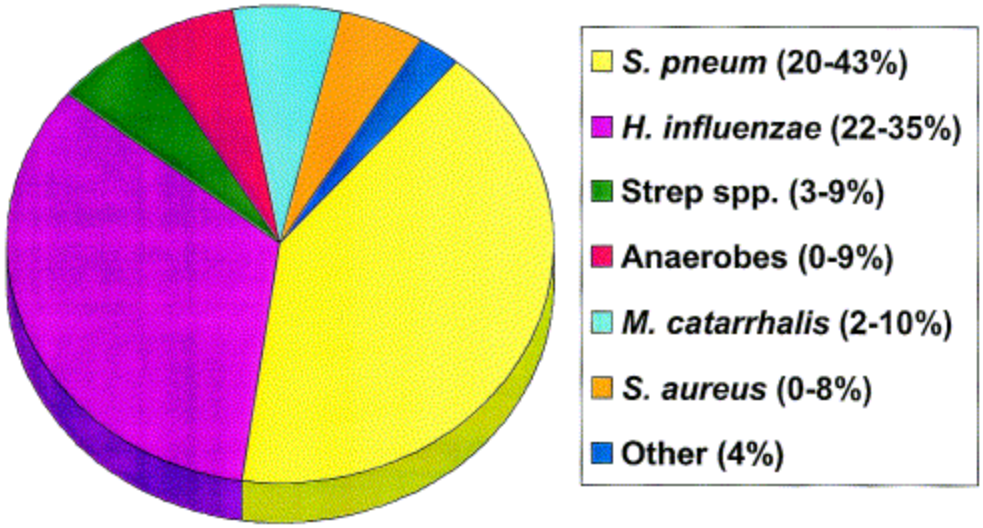

A
1
2

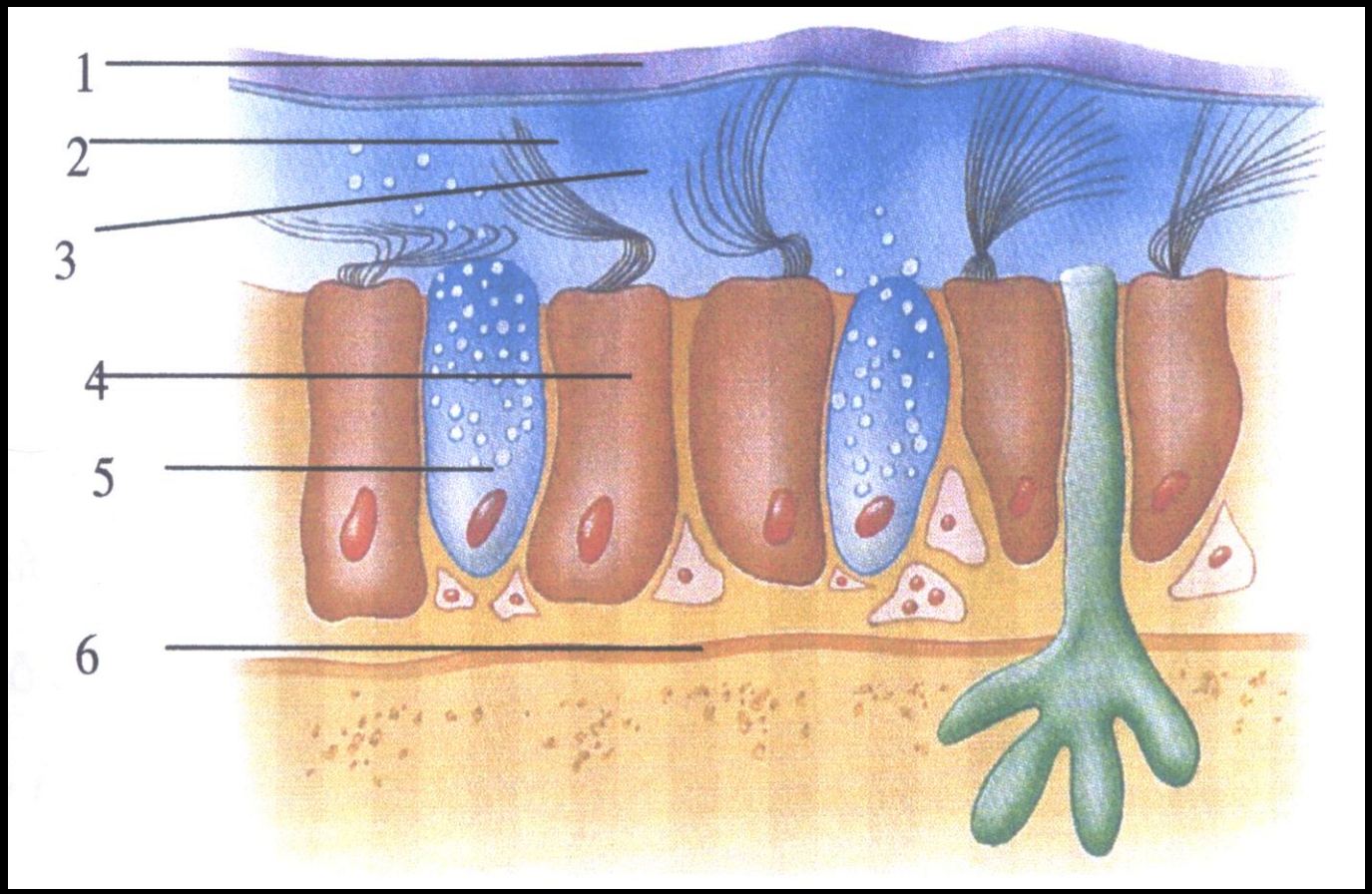

B

Microbiology of Acute Bacterial Rhinosinusitis (Children)



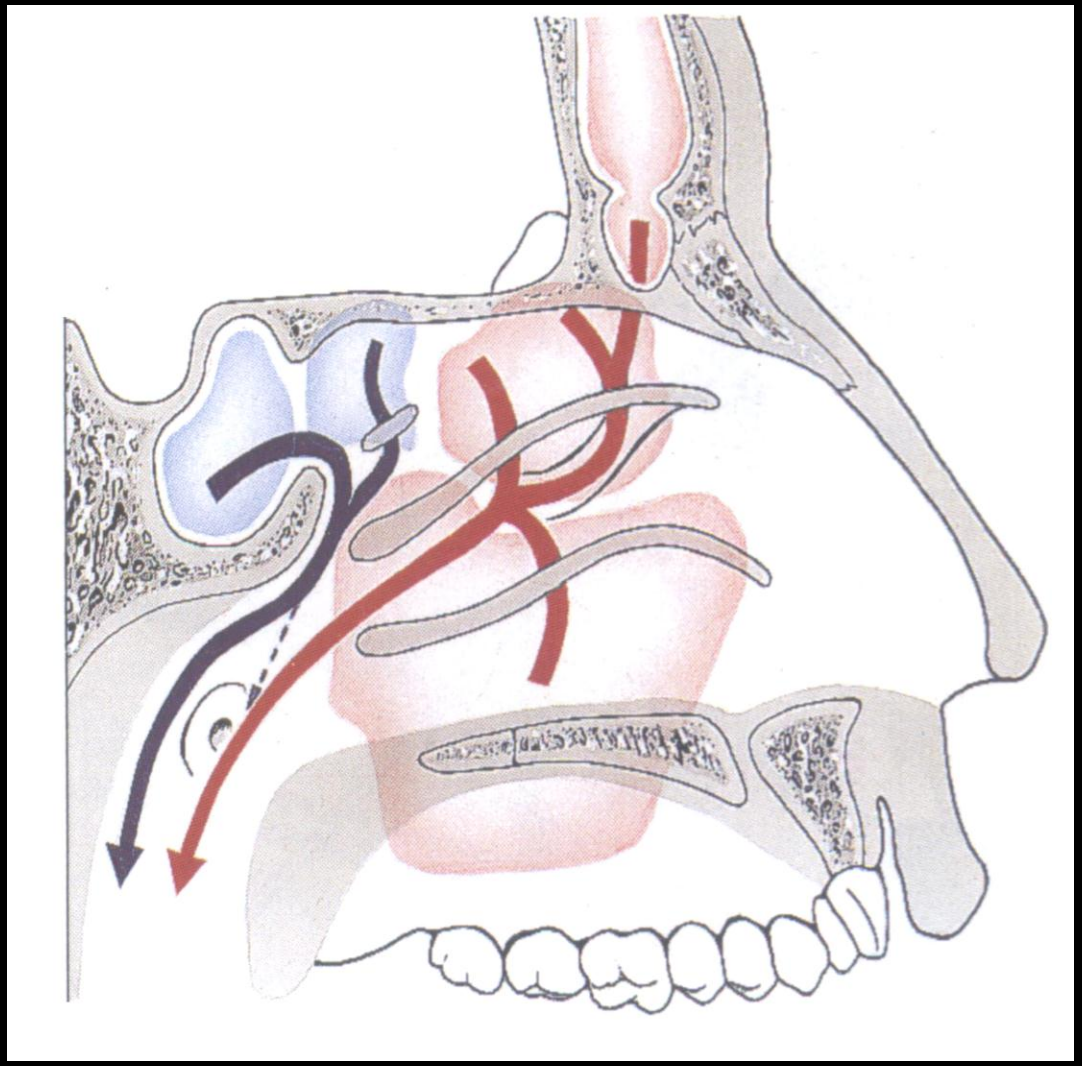
Microbiology of Acute Bacterial Rhinosinusitis (Adults)





NM mũi xoang và sự thanh thải niêm lông

1.Lớp thám nhầy **2.**Lông chuyển **3.**Dịch gian lông chuyển
4.Tế bào lông chuyển **5.**Tế bào tuyến **6.**Màng đáy



Sơ đồ thông khí-dẫn lưu-tự làm sạch của các xoang

(Theo Stammberger, F.E.S.S.,Endo-Press,Tuttlingen 2001)