# RHINOSINUSITIS

# INTRODUCTION

- Highly prevalent, still the pathogenesis is elusive .
- Inflammation of nose and paranasal sinuses mucosa

Classification (Basis of Duration):

*(Rhinosinusitis Task Force of the American Academy of Otolaryngology & Head and Neck Cancer Surgery :Lanza and Kennedy)*

*Acute : 7 days to <4 wks*

*Subacute : 4 - 12 wks*

*Recurrent acute 4 or more episodes /yr*

*Chronic (CRS) :*

*Acute exacerbation of chronic : sudden worsening of CRS with return to baseline after :*

*>12 wks*

PATHOPHYSIOLOGY- sinus ostia obstruction

Host factors:

1.Genetic diseasaes: immotile cilia syndrome ,cystic fibrosis

2.Anatomic abn.:concha bullosa ,septal spur (acute)

3.Systemic diseases

4.Medications

5.Neoplasms

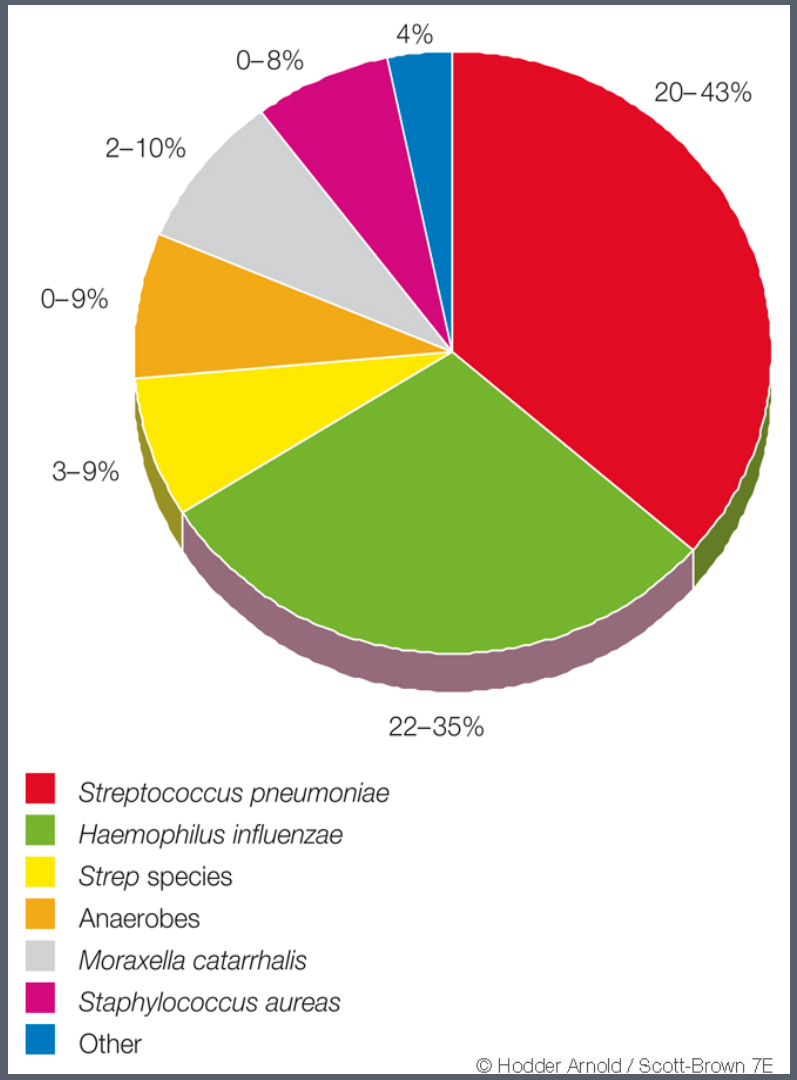
6.Trauma ,nasal packing , nasogastric tube placement

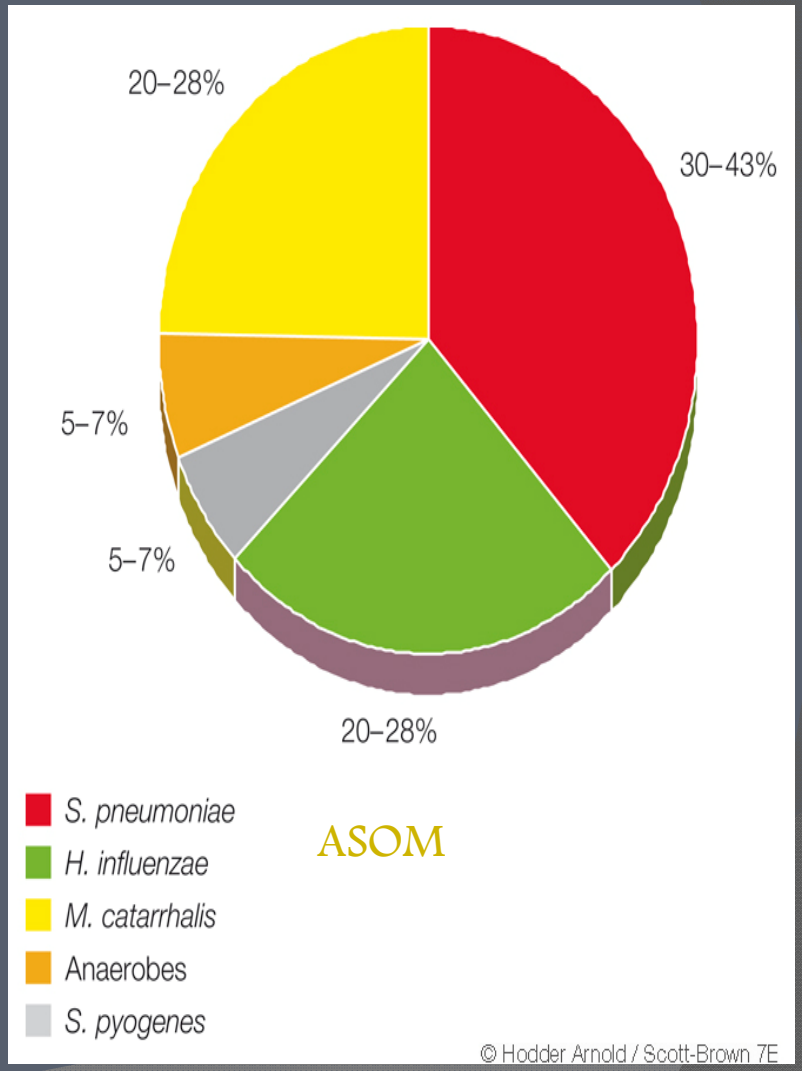
7.Allergy

In addition cells like B/T cells, Plasma cells, eosinophils ,Ig, IL, biofims , superantigen, osteitis are part of pathophysiology.

Infections (bacterial/viral/fungal)play a major part in ABRS.

# Etiology of Acute bacterial rhinosinusitis



# CHRONIC RHINOSINUSITIS

- In 1996, American Academy of Otolaryngology-Head & Neck Surgery`s Multidisciplinary Rhinosinusitis Task Force.
- 2 or more major factors (or) 1 major factor and 2 minor factors

Major factors

- facial pain or pressure,
- nasal obstruction or blockage,
- nasal discharge or purulence or discolored postnasal discharge,
- hyposmia or anosmia,
- purulence in nasal cavity, and

Minor factors

headache, fever, halitosis, fatigue, dental pain, cough, and ear pain/pressure/fullness.

Note ;

1.facial pain requires another major factor associated with it

2. Fever is Major Criteria in ARS but is Minor in CRS

Limitations : Mainly subjective parameters.

In 1997, Task Force outlined specific physical examination findings & categorised these into 2 groups

# Currently, CRS : ICD - 10, code J 32



**Table 10**
**Chronic and recurrent rhinosinusitis definitions**

Latest Modification by Task Force

| Term | Definition |
|---|---|
| Chronic rhinosinusitis (CRS) | Twelve (12) weeks or longer of two or more of the following signs and symptoms:<br>• mucopurulent drainage (anterior, posterior, or both)<br>• nasal obstruction (congestion),<br>• facial pain-pressure-fullness, or<br>• decreased sense of smell<br>AND inflammation is documented by one or more of the following findings:<br>• purulent (not clear) mucus or edema in the middle meatus or ethmoid region,<br>• polyps in nasal cavity or the middle meatus, and/or<br>• 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:<br>• each episode of ABRS should meet diagnostic criteria |

- It is recommended that all patients who meet clinical criteria of CRS have a Ct scan or nasal endoscopy to confirm the diagnosis.

# STAGING(Lund & Mackay Staging ): based on radiology

**Table 1.** Radiological grading of the sinusal system proposed by Lund and Mackay.

| Sinusal system | Left | Right |
|---|---|---|
| Maxillary | | |
| Anterior ethmoid | | |
| Posterior ethmoid | | |
| Sphenoid | | |
| Frontal | | |
| Osteomeatal complex | | |
| Total score for each side | | |

Scores: Sinuses 0 = no alterations, 1 = partial opacification, 2 = total opacification

Osteomeatal complex: 0 = not occluded, 2 = obstructed

# TREATMENT OF CRS

## Aim of treatment

- To reduce symptom and signs
- To improve patients' quality of life and
- To prevent disease progression and/or recurrence.

- Medical

– Many avenues of medical treatment exist and the treatment tends to be combined
  - normal saline douching;
  - corticosteroids;
  - decongestants;
  - antimicrobials;
  - antihistaminics & antileukotrienes;
  - immunotherapy.

- Surgical

– Refractory / Failed cases for medical therapy.

Table 2. Available therapies for post-ESS disease.

| Post-ESS therapy | Effect confirmed in RPCT | Level of evidence | Recommendation |
|---|---|---|---|
| Antibiotics, oral- short term | Yes, in ABRS | Weak | Recommendation, exacerbations |
| Antibiotics, oral long-term | Yes, in CRS | Moderate | Option, selected cases |
| Antibiotics, nebulised | No | Weak | Option, exacerbations |
| Steroids, oral | Yes | Weak | Recommendation, short term |
| Steroids, spray | Yes, in NP | Strong | Recommendation |
| Steroids, drop | Yes, in NP | Strong | Recommendation |
| Steroids, irrigation | No | Weak | Option |
| Saline, spray | Yes * | Moderate | Recommendation |
| Saline, irrigation | No | Weak | Option |
| Antifungal, oral | No | Weak | Not recommended |
| Antifungal, irrigation | No | Moderate | Not recommended |
| Leukotriene antagonist | No | Weak | Option |
| Leukotriene (5-LO) inhibitor | No | Weak | Not recommended |
| IVIG | No | Weak | Option |
| ASA desensitization | Yes | Weak | Option |
| Revision surgery | No | Weak | Option |
| Alternative approaches | No | Weak | Not recommended |

Future potential therapies

- Therapies targeting biofilms – in vitro studies
- Anti IL-5 monoclonal antibodies – human studies
- Phototherapy – clinical trials
- Vaccines - developmental