What is new in the 2012 position paper?

EPOS 2012

Wytske Fokkens, The Netherlands
Consultants

Objectives of EP³OS

Update for ENT, non-ENT specialists and GPs:

• Updated review on rhinosinusitis and nasal polyposis
• Evidence Based Medicine on diagnostic tools
• Evidence Based Medicine on available treatments
• Stepwise approach on the disease management
• Recommended definitions and result outcomes for different aspects of research

web: www.ep3os.org, rhinologyjournal.com
# Category of Evidence and Strength of Recommendation

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Letter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ia</td>
<td>Evidence from meta-analysis of randomised controlled trials</td>
<td></td>
</tr>
<tr>
<td>Ib</td>
<td>Evidence from at least one randomised controlled trial</td>
<td></td>
</tr>
<tr>
<td>IIA</td>
<td>Evidence from at least one controlled study without randomisation</td>
<td></td>
</tr>
<tr>
<td>IIB</td>
<td>Evidence from at least one other type of quasi-experimental study</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Evidence from non-experimental descriptive studies, such as comparative studies, correlation studies, and case-control studies</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>Evidence from expert committee reports or opinions or clinical experience of respected authorities, or both</td>
<td></td>
</tr>
</tbody>
</table>

**Letter**

A. Directly based on Category I evidence

B. Directly based on Category II evidence or extrapolated recommendation from Category I evidence

C. Directly based on Category III evidence or extrapolated recommendation from Category I or II evidence

D. Directly based on Category IV evidence or extrapolated recommendation from Category I, II or III evidence

What is Evidence-based Medicine?

Evidence-based medicine is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence-based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research.

Position paper

- uses an Evidence Medicine approach of selected subjects
- helps practitioners to identify and apply the most efficacious and pertinent clinical decisions
- points out areas where additional research is needed
- helps to determine the most cost-effective and appropriate patient care even if this decision is not the cheapest one
- IS NOT: tell practitioners what to do
- IS NOT: a legal document
Tripod of evidence based medicine

1. Best available external *evidence* systematically identified and incorporated in the clinical decisions
2. Irreplaceable individual *clinical expertise*
3. *Patient preference*
Symptoms of Rhinosinusitis

- Facial pain / pressure
- Blockage / obstruction / congestion
- Impaired sense of smell
- Rhinorrhea

web: www.ep3os.org, rhinologyjournal.com
Clinical Definition
Rhinosinusitis in adults

Inflammation of the nose and the paranasal sinuses characterized by two or more symptoms, one of which should be either nasal blockage / obstruction / congestion or nasal discharge (anterior / posterior nasal drip):

± Facial pain / pressure
± Reduction / loss of smell

AND either ENDOSCOPIC SIGNS of
- Polyps and / or
- Mucopurulent discharge primarily from middle meatus and / or
- Edema / mucosal obstruction primarily in middle meatus

AND / OR CT CHANGES
- Mucosal changes within ostiomeatal complex and / or sinuses

web: www.ep3os.org, rhinologyjournal.com
General Classification
Rhinosinusitis

1. Duration of symptoms:
   - Acute  > 10 days and < 12 weeks, complete resolution of symptoms
   - Chronic > 12 weeks, no complete resolution of symptoms

2. Severity of symptoms (VAS, main symptom or symptom score):
   - Mild    \( VAS \leq 3 \)
   - Moderate \( VAS > 3 - 7 \)
   - Severe  \( VAS \geq 7 \)

web: www.ep3os.org, rhinologyjournal.com
Definitions

Clinical diagnosis
- Symptoms
- Either nasendoscopy or CT scan

Epidemiologic diagnosis
- Symptoms
- Duration

Research diagnosis
- Endoscopic
- Prior surgery

Chronic Rhinosinusitis
- Nasal Polyps

web: www.ep3os.org, rhinologyjournal.com
Clinical Definition
Rhinosinusitis in children

Inflammation of the nose and the paranasal sinuses characterized by two or more symptoms, one of which should be either nasal blockage / obstruction / congestion or nasal discharge (anterior / posterior nasal drip):

± Facial pain / pressure
± Cough

AND either ENDOSCOPIC SIGNS of
- Polyps and / or
- Mucopurulent discharge primarily from middle meatus and / or
- Edema / mucosal obstruction primarily in middle meatus

AND/OR CT CHANGES
- Mucosal changes within ostiomeatal complex and / or sinuses

Epidemiological Definition
Rhinosinusitis

Two or more symptoms, one of which should be either nasal blockage / obstruction / congestion or nasal discharge (anterior / postnasal drip):
± Facial pain / pressure
± Reduction or loss of smell

Based on symptoms
Validation by telephone or interview
No need for ENT exam or radiology
Question for allergic symptoms

web: www.ep3os.org, rhinologyjournal.com
Acute rhinosinusitis is defined as:

Sudden onset of two or more symptoms, one of which should be either nasal blockage/obstruction/congestion or nasal discharge (anterior/posterior nasal drip):

- ± facial pain/pressure,
- ± reduction or loss of smell
- For <12 weeks;
- With symptom free intervals if the problem is recurrent,
- With validation by telephone or interview.
Acute rhinosinusitis

Common cold/ acute viral rhinosinusitis is defined as:
• Duration of symptoms for less than 10 days.

Acute post-viral rhinosinusitis is defined as:
• Increase of symptoms after 5 days or persistent symptoms after 10 days with less than 12 weeks duration.

Acute bacterial rhinosinusitis (ABRS)
• Acute bacterial rhinosinusitis is suggested by the presence of at least 3 symptoms/signs of:
  – Discoloured discharge (with unilateral predominance) and purulent secretion in 
    cavum nasi,
  – Severe local pain (with unilateral predominance)
  – Fever (>38°C)
  – Elevated ESR/CRP
  – ‘Double sickening’ (i.e. a deterioration after an initial milder phase of illness).

web: www.ep3os.org, rhinologyjournal.com
Definition of Acute Rhinosinusitis

Increase in symptoms after 5 days or persistent symptoms after 10 days with less than 12 weeks duration

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Days</th>
<th>Weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Cold</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postviral Acute Rhinosinusitis</td>
<td>Increase in symptoms after 5 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Persistent symptoms after 10 days</td>
<td></td>
</tr>
</tbody>
</table>

**Signs of potential acute bacterial rhinosinusitis:**

At least 3 of:
- Discoloured discharge
- Severe local pain
- Fever
- Elevated ESR/CRP
- Double sickening* (*: becoming worse again after initial recovery)

Acute rhinosinusitis can be divided into: common cold and post-viral rhinosinusitis. A small subgroup of the post-viral rhinosinusitis is caused by bacteria: acute bacterial rhinosinusitis (ABRS).
## Treatment evidence and recommendations for adults with acute rhinosinusitis

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Level</th>
<th>Grade of recommendation</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>antibiotic</td>
<td>la</td>
<td>A</td>
<td>yes in ABRS</td>
</tr>
<tr>
<td>topical steroid</td>
<td>la</td>
<td>A</td>
<td>yes mainly in post viral ARS</td>
</tr>
<tr>
<td>addition of topical steroid to antibiotic</td>
<td>la</td>
<td>A</td>
<td>yes in ABRS</td>
</tr>
<tr>
<td>addition of oral steroid to antibiotic</td>
<td>la</td>
<td>A</td>
<td>yes in ABRS</td>
</tr>
<tr>
<td>saline irrigation</td>
<td>la</td>
<td>A</td>
<td>yes in ABRS</td>
</tr>
<tr>
<td>antihistamine analgesic-decongestion combination</td>
<td>la</td>
<td>A</td>
<td>yes in viral ARS</td>
</tr>
<tr>
<td>ipratropium bromide</td>
<td>la</td>
<td>A</td>
<td>in viral ARS</td>
</tr>
<tr>
<td>probiotics</td>
<td>la</td>
<td>A</td>
<td>to prevent viral ARS</td>
</tr>
<tr>
<td>zinc</td>
<td>la</td>
<td>C</td>
<td>no</td>
</tr>
<tr>
<td>vitamine C</td>
<td>la</td>
<td>C</td>
<td>no</td>
</tr>
<tr>
<td>echinacea</td>
<td>la</td>
<td>C</td>
<td>no</td>
</tr>
<tr>
<td>herbal medicine (pelargonium sidoides, Myrtol)</td>
<td>lb</td>
<td>A</td>
<td>yes, in viral and post viral ARS</td>
</tr>
<tr>
<td>aspirin / NSAID's</td>
<td>lb</td>
<td>A</td>
<td>yes, in viral and post viral ARS</td>
</tr>
<tr>
<td>acetaminophen (paracetamol)</td>
<td>lb</td>
<td>A</td>
<td>yes, in viral and post viral ARS</td>
</tr>
<tr>
<td>oral antihistamine added in allergic patients</td>
<td>lb</td>
<td>(1 study) A(-)</td>
<td>no</td>
</tr>
<tr>
<td>steam inhalation</td>
<td>la(-$)</td>
<td>A(-)**</td>
<td>no</td>
</tr>
<tr>
<td>cromoglycate</td>
<td>lb(-)</td>
<td>A(-)</td>
<td>no</td>
</tr>
<tr>
<td>decongestion</td>
<td>no data for single use</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>mucolytics</td>
<td>no data</td>
<td>D</td>
<td>no</td>
</tr>
</tbody>
</table>

*1b (-): 1b study with negative outcome  
$ la(-$) la level of evidence that treatment is not effective.  
**A(-): grade A recommendation not to use
Acute Postviral Rhinosinusitis is a self limiting disease
Antibiotic treatment did not improve the clinical course of acute maxillary sinusitis presenting to general practice. For these patients, an initial radiographic examination is not necessary and initial management can be limited to symptomatic treatment. Whether antibiotics are necessary in more severe cases warrants further study.

van Buchem, Lancet 1997
# Antibiotics for Acute Maxillary Sinusitis

Meta analyses

<table>
<thead>
<tr>
<th>Authors, year, ref.</th>
<th>Inclusion criteria</th>
<th>Number of</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Falagas, et al. 2009</td>
<td>RCTs</td>
<td>12</td>
<td>4,430</td>
</tr>
<tr>
<td>Falagas, et al. 2008</td>
<td>RCTs</td>
<td>17</td>
<td>2,648</td>
</tr>
<tr>
<td>Burton, et al. 2008</td>
<td>Extracts from the Cochrane library</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Ahovuo-Saloranta, et al. 2008</td>
<td>RCTs</td>
<td>5</td>
<td>631</td>
</tr>
<tr>
<td>Young, et al. 2008</td>
<td>RCTs</td>
<td>9</td>
<td>2,547</td>
</tr>
<tr>
<td>Williams JW Jr, et al. 2008</td>
<td>RCTs</td>
<td>49</td>
<td>13,660</td>
</tr>
<tr>
<td>Rosenfeld, et al. 2007</td>
<td>DBPC randomized trials</td>
<td>13</td>
<td>NA</td>
</tr>
<tr>
<td>Arroll B. 2005</td>
<td>Review of the Cochrane reviews</td>
<td>4</td>
<td>NA</td>
</tr>
<tr>
<td>Stalman, et al. 1997</td>
<td>DBPC randomized trials</td>
<td>3</td>
<td>NA</td>
</tr>
</tbody>
</table>

RCTs: randomized controlled trials; DBPC: double-blind, placebo-controlled; NA: not applicable

web: www.ep3os.org, rhinologyjournal.com
Why do we use antibiotics?

- Acute rhinosinusitis is sometimes a bacterial disease but antibiotics have very little effect.
- Acute rhinosinusitis can lead to severe complications but antibiotics do not seem to prevent them.
Can more liberal use of antibiotics prevent complications?

**France** 3 times more antibiotics than **The Netherlands**

- estimated studied population: 12 million (age 14 – 60)
- complications: 30/year (11 intracranial)
- 37% no indication of ARS before complication
- 44% had antibiotics before complication (70% of the patients with proven bacterial ARS)

- Adult population: 12.7 million
- complications: 22/year (11 intracranial)
- 40% no indication of ARS before complication
- 43% had antibiotics before complication

Stoll D, Rev Laryngol Otol Rhinol (Bord). 2006
Hansen F, Fokkens WJ Rhinology 2011
Outpatient Antibiotic Sales in the European Union

Defined daily dose per 1,000 inhabitants per day

- Others
- Macrolides and lincosamides J01F
- Quinolones J01M
- Trimethoprim J01EA
- Tetracyclines J01A
- Cephalosporins J01D
- Penicillinase-resistant penicillins J01CF
- Narrow-spectrum penicillins J01CE
- Broad-spectrum penicillins J01CA

Increasing Prevalence of Antimicrobial Resistance

Increased Penicillin Resistance of *S. pneumoniae* Correlates With Higher Penicillin Use

Correlation between penicillin use and prevalence of penicillin nonsusceptible *S. pneumoniae*

- $n=19$
- $z=0.84$ (0.62-0.94)
- $P<0.0001$

Acute rhinosinusitis in adults Management scheme for Primary Care

2 symptoms: one of which should be nasal obstruction or discoloured discharge
+/- frontal pain, headache
+/- smell disturbance
examination: anterior rhinoscopy
X-ray/CT not recommended

Symptoms less than 5 days or improving thereafter
- Common cold
- Symptomatic relief: analgesics, nasal saline irrigation, decongestants, selected herbal compounds
- No effect after 10 days of treatment
- Consider referral to specialist

Symptoms persistent after 10 days or increasing after 5 days
- Moderate (post viral)
  - + topical steroids
  - No effect after 14 days of treatment
  - Continue treatment for 7 - 14 days

Severe (including bacterial)
- Topical steroids consider antibiotics
- Effect in 48 h
- No effect in 48 h
- Refer to specialist

Immediate referral:
- Periorbital oedema/erythema
- Displaced globe
- Double vision
- Ophthalmoplegia
- Reduced vision acuity
- Severe unilateral or bilateral frontal headache
- Frontal swelling
- Signs of meningitis or neurologic signs

* = at least 3 of: discoloured discharge severe local pain fever elevated ESR/CRP double sickening

web: www.ep3os.org, rhinologyjournal.com
**Treatment evidence and recommendations for children with acute rhinosinusitis**

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<td>A</td>
</tr>
<tr>
<td>addition of topical steroid to antibiotic</td>
<td>Ia</td>
<td>A</td>
</tr>
<tr>
<td>mucolytics (erdosteine)</td>
<td>1b (-)*</td>
<td>A(-)**</td>
</tr>
<tr>
<td>saline irrigation</td>
<td>IV</td>
<td>D</td>
</tr>
<tr>
<td>oral antihistamine</td>
<td>IV</td>
<td>D</td>
</tr>
<tr>
<td>decongestion</td>
<td>IV</td>
<td>D</td>
</tr>
</tbody>
</table>

*1b (-): 1b study with negative outcome
**A(-): grade A recommendation not to use

web: www.ep3os.org, rhinologyjournal.com
Paediatric acute rhinosinusitis management scheme for Primary Care

2 symptoms: one of which should be nasal obstruction or discoloured discharge
+/- frontal pain, headache
+/- cough
examination: anterior rhinoscopy
X-ray/CT not recommended

Immediate referral:
- periorbital oedema/erythema
- displaced globe
- double vision
- ophthalmoplegia
- reduced vision acuity
- severe unilateral or bilateral frontal headache
- frontal swelling
- signs of meningitis or neurologic signs

Symbol * = at least 3 of:
- discoloured discharge
- severe local pain
- fever
- elevated ESR/CRP
- double sickening

Symptoms less than 5 days or improving thereafter:
- common cold
  - symptomatic relief: analgesics, nasal saline irrigation, decongestants, selected herbal compounds
  - no effect after 10 days of treatment
  - consider referral to specialist

Symptoms persistent after 10 days or increasing after 5 days:
- moderate (post viral)
  - + topical steroids
  - no effect after 14 days of treatment
  - continue treatment for 7 - 14 days

- severe *
  - topical steroids consider antibiotics
  - effect in 48 h
  - refer to specialist

* (including bacterial)
Clinical Definition
Chronic Rhinosinusitis in adults

Inflammation of the nose and the paranasal sinuses characterized by two or more symptoms, one of which should be either nasal blockage / obstruction / congestion or nasal discharge (anterior / posterior nasal drip) for at least 12 weeks:

± Facial pain / pressure
± Reduction / loss of smell

AND either ENDOSCOPIC SIGNS of
- Polyps and / or
- Mucopurulent discharge primarily from middle meatus and / or
- Edema / mucosal obstruction primarily in middle meatus

AND / OR CT CHANGES
- Mucosal changes within ostiomeatal complex and / or sinuses

web: www.ep3os.org, rhinologyjournal.com
Prevalence CRS
11%

Map of prevalence of CRS. Symbols indicate prevalence categories of ≥ 15% (red stars), ≥ 10% and <15% (orange diamonds) and < 10 % (green hexagons)

Associations

- Prevalence of CRS associated with:
  - AR (OR 3.1) especially persistent rhinitis (OR 6.0)
  - Current Asthma (OR 2.2)
  - Current smoking and ex-smoking significantly associated with CRS (OR 2.1 and 1.3)

- Association between CRS, AR and CA persisted after correction for smoking, and if analyses were restricted to non-smokers

- In all age groups, men and women, and irrespective of smoking behaviour, asthma was associated with CRS

Definition of difficult-to-treat rhinosinusitis

Patients who have persistent symptoms of rhinosinusitis despite appropriate treatment (recommended medication and surgery). Although the majority of CRS patients can obtain control, some patients will not do so even with the maximal medical therapy and surgery.

• Patients who do not reach an acceptable level of control despite adequate surgery, intranasal corticosteroid treatment and up to 2 short courses of antibiotics or systemic corticosteroids in the last year can be considered to have difficult-to-treat rhinosinusitis.
Control of disease

The goal of CRS treatment is to achieve and maintain clinical control. Control is defined as a disease state in which the patients does not have symptoms or the symptoms are not bothersome, if possible combined with a healthy or almost healthy mucosa and only the need for local medication. We do not know what percentage of patients with CRS actually can achieve control of disease.
## Assessment of current clinical control of CRS (in the last month)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Controlled (all of the following)</th>
<th>Partly controlled (at least one present)</th>
<th>Uncontrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nasal blockage</td>
<td>Not present or not bothersome</td>
<td>Present on most days of the week</td>
<td>Three or more features of partly controlled CRS</td>
</tr>
<tr>
<td>Rhinorrhea/Postnasal drip</td>
<td>Little and mucous</td>
<td>Mucopurulent on most days of the week</td>
<td></td>
</tr>
<tr>
<td>Facial pain/headache</td>
<td>Not present or not bothersome</td>
<td>Present</td>
<td></td>
</tr>
<tr>
<td>Smell</td>
<td>Normal or only slightly impaired</td>
<td>Impaired</td>
<td></td>
</tr>
<tr>
<td>Sleep disturbance or fatigue</td>
<td>Not impaired</td>
<td>Impaired</td>
<td></td>
</tr>
<tr>
<td>Nasal endoscopy (if available)</td>
<td>Healthy or almost healthy mucosa</td>
<td>Diseased mucosa (nasal polyps, mucopur. secretions, inflamed mucosa)</td>
<td></td>
</tr>
<tr>
<td>Systemic medication needed to control disease</td>
<td>Not needed</td>
<td>Need of a course of antibiotics or systemic corticosteroids in the last three months</td>
<td>Need of long term antibiotics or systemic corticosteroids in the last month</td>
</tr>
</tbody>
</table>

web: www.ep3os.org, rhinologyjournal.com
Clinical Definition
Chronic Rhinosinusitis in adults

Inflammation of the nose and the paranasal sinuses characterized by two or more symptoms, one of which should be either nasal blockage / obstruction / congestion or nasal discharge (anterior / posterior nasal drip) for at least 12 weeks:

± Facial pain / pressure
± Reduction / loss of smell

AND either ENDOSCOPIC SIGNS of
- Polyps and / or
- Mucopurulent discharge primarily from middle meatus and / or
- Edema / mucosal obstruction primarily in middle meatus

AND / OR CT CHANGES
- Mucosal changes within ostiomeatal complex and / or sinuses

Treatment of Chronic Rhinosinusitis with or without nasal polyps

- Chronic rhinosinusitis with nasal polyps (CRSwNP): bilateral, endoscopically visualised in middle meatus.
- Chronic rhinosinusitis without nasal polyps (CRSSNP): no visible polyps in middle meatus, if necessary following decongestant.
<table>
<thead>
<tr>
<th>Therapy</th>
<th>Level</th>
<th>Grade of recommendation</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>steroid – topical</td>
<td>Ia</td>
<td>A</td>
<td>yes</td>
</tr>
<tr>
<td>nasal saline irrigation</td>
<td>Ia</td>
<td>A</td>
<td>yes</td>
</tr>
<tr>
<td>bacterial Lysates (OM-85 BV)</td>
<td>Ib</td>
<td>A</td>
<td>unclear</td>
</tr>
<tr>
<td>oral antibiotic therapy short term &lt; 4 weeks</td>
<td>II</td>
<td>B</td>
<td>during exacerbations</td>
</tr>
<tr>
<td>oral antibiotic therapy long term ≥12 weeks**</td>
<td>Ib</td>
<td>C</td>
<td>yes, especially if IgE is not elevated</td>
</tr>
<tr>
<td>steroid – oral</td>
<td>IV</td>
<td>C</td>
<td>unclear</td>
</tr>
<tr>
<td>mucolytics</td>
<td>III</td>
<td>C</td>
<td>no</td>
</tr>
<tr>
<td>proton pump inhibitors</td>
<td>III</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>decongestant oral / topical</td>
<td>no data on single use</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>allergen avoidance in allergic patients</td>
<td>IV</td>
<td>D</td>
<td>yes</td>
</tr>
<tr>
<td>oral antihistamine added in allergic patients</td>
<td>no data</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>herbal en probiotics</td>
<td>no data</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>immunotherapy</td>
<td>no data</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>probiotics</td>
<td>Ib (-)</td>
<td>A(-)</td>
<td>no</td>
</tr>
<tr>
<td>antimycotics – topical</td>
<td>Ib (-)</td>
<td>A(-)</td>
<td>no</td>
</tr>
<tr>
<td>antimycotics - systemic</td>
<td>no data</td>
<td>A(-)</td>
<td>no</td>
</tr>
<tr>
<td>antibiotics – topical</td>
<td>Ib (-)</td>
<td>A(-)</td>
<td>no</td>
</tr>
</tbody>
</table>

# Ib (-): Ib study with a negative outcome
$ A(-)$: grade A recommendation not to use

web: www.ep3os.org, rhinologyjournal.com
CRS in adults management scheme for Primary Care and non-ENT-specialists

- two or more symptoms one of which should be either nasal blockage/obstruction/congestion or nasal discharge: anterior/post nasal drip; ± facial pain/pressure, ± reduction or loss of smell; examination: anterior rhinoscopy X-ray/CT not recommended

**endoscopy not available**
- examination: anterior rhinoscopy X-ray/CT not recommended
  - topical steroids nasal irrigation
  - re-evaluation after 4 weeks
    - improvement: continue therapy
    - no improvement: refer to ENT-specialist

**endoscopy available**
- follow ENT scheme for CRSsNP or CRSwNP
  - refer to ENT-specialist if operation is considered

- consider other diagnosis
  - unilateral symptoms
  - bleeding
  - crusting
  - cacosmia
  - orbital symptoms: peri-orbital oedema/erythema displaced globe double or reduced vision ophthalmoplegia
  - severe frontal headache frontal swelling signs of meningitis neurological signs

- urgent investigation and intervention

web: www.ep3os.org, rhinologyjournal.com
CRSsNP in adults management scheme for ENT-specialists

2 symptoms: one of which should be nasal obstruction or discoloured discharge
+/- frontal pain, headache
+/- smell disturbance
ENT examination including endoscopy
consider CT scan
check for allergy
consider diagnosis and treatment of co-morbidities eg. asthma

mild
VAS 0-3
no serious mucosal disease at endoscopy

topical steroids
nasal saline irrigation
improvement
follow-up +
nasal saline irrigation

topical steroids
consider long term antibiotics

no improvement after 3 months

moderate/severe
VAS >3-10
mucosal disease at endoscopy
topical steroids
nasal saline irrigation
consider long term antibiotics (if IgE is not elevated)

CT scan
consider surgery
follow up +
topical steroids
nasal saline irrigation
culture
consider long term antibiotics

CT scan
if not done before
no improvement
consider surgery

severe frontal headache
frontal swelling
signs of meningitis
neurological signs

consider other diagnosis
unilateral symptoms
bleeding
clotting
cacosmia

orbital symptoms:
peri-orbital oedema/erythema
displaced globe
double or reduced vision
ophthalmoplegia

urgent investigation and intervention

web: www.ep3os.org, rhinologyjournal.com
# Treatment evidence and recommendations for adults with chronic rhinosinusitis with nasal polyps

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Level</th>
<th>Grade of recommendation</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>topical steroids</td>
<td>Ia</td>
<td>A</td>
<td>yes</td>
</tr>
<tr>
<td>oral steroids</td>
<td>Ia</td>
<td>A</td>
<td>yes</td>
</tr>
<tr>
<td>oral antibiotics short term &lt;4 weeks</td>
<td>Ia and Ia(-)</td>
<td>C%</td>
<td>yes, small effect</td>
</tr>
<tr>
<td>oral antibiotic long term ≥ 12 weeks</td>
<td>III</td>
<td>C</td>
<td>yes, especially if IgE is not elevated, small effect</td>
</tr>
<tr>
<td>capsaicin</td>
<td>II</td>
<td>C</td>
<td>no</td>
</tr>
<tr>
<td>proton pump inhibitors</td>
<td>II</td>
<td>C</td>
<td>no</td>
</tr>
<tr>
<td>aspirin desensitisation</td>
<td>II</td>
<td>C</td>
<td>unclear</td>
</tr>
<tr>
<td>furosemide</td>
<td>III</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>immunosuppressants</td>
<td>IV</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>nasal saline irrigation</td>
<td>Ib, no data in single use</td>
<td>D</td>
<td>yes for symptomatic relief</td>
</tr>
<tr>
<td>topical antibiotics</td>
<td>no data</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>anti-Ill5</td>
<td>no data</td>
<td>D</td>
<td>unclear</td>
</tr>
<tr>
<td>phytotherapy</td>
<td>no data</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>decongestant topical / oral</td>
<td>no data in single use</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>mucolytics</td>
<td>no data</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>oral antihistamine in allergic patients</td>
<td>no data</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>antifúngicos – topical</td>
<td>Ia (-) **</td>
<td>A(-)</td>
<td>no</td>
</tr>
<tr>
<td>antifúngicos – systemic</td>
<td>Ib (-)#</td>
<td>A(-)</td>
<td>no</td>
</tr>
<tr>
<td>anti-leukotrienes</td>
<td>Ib (-)</td>
<td>A(-)</td>
<td>no</td>
</tr>
<tr>
<td>anti-IgE</td>
<td>Ib (-)</td>
<td>A(-)</td>
<td>no</td>
</tr>
</tbody>
</table>

# Ib (-): Ib study with a negative outcome
$ A(-):$ grade A recommendation not to use

web: www.ep3os.org, rhinologyjournal.com
CRSwNP management scheme for ENT-specialists

2 symptoms: one of which should be nasal obstruction or discoloured discharge
 +/- frontal pain, headache
 +/- smell disturbance
 ENT examination including endoscopy (size of polyps)
 consider CT scan
 consider diagnosis and treatment of co-morbidities

- **mild**
  - VAS 0-3
  - no serious mucosal disease at endoscopy
  - topical steroid spray
  - review after 3 months
  - improvement
  - continue with topical steroids
  - review every 6 months

- **moderate**
  - VAS >3-7
  - mucosal disease at endoscopy
  - topical steroid spray
  - consider increase dose
  - consider drops
  - consider doxycycline
  - review after 3 months
  - no improvement

- **severe**
  - VAS >7-10
  - mucosal disease at endoscopy
  - topical steroids
  - oral steroids (short course)
  - review after 1 month
  - improvement
  - no improvement

  - CT scan
  - surgery

consider other diagnosis
 unilateral symptoms
 bleeding
 crusting
 cacosmia

orbital symptoms:
 peri-orbital oedema/erythema
 displaced globe
 double or reduced vision
 ophthalmoplegia

severe frontal headache
 frontal swelling
 signs of meningitis
 neurological signs

urgent investigation and intervention

web: www.ep3os.org, rhinologyjournal.com
Clinical Definition
Chronic Rhinosinusitis in children

Inflammation of the nose and the paranasal sinuses characterized by two or more symptoms, one of which should be either nasal blockage / obstruction / congestion or nasal discharge (anterior / posterior nasal drip) for at least 12 weeks:

± Facial pain / pressure
± Cough

AND either ENDOSCOPIC SIGNS of
- Polyps and / or
- Mucopurulent discharge primarily from middle meatus and / or
- Edema / mucosal obstruction primarily in middle meatus

AND / OR CT CHANGES
- Mucosal changes within ostiomeatal complex and / or sinuses

web: www.ep3os.org, rhinologyjournal.com
Paediatric CRS

- The inflammatory reaction in the sinus tissues of children with CRS is rich in lymphocytes and exhibits less eosinophilia and epithelial disruption compared to adults.

- Not any CT scan abnormality indicates relevant clinical CRS in children.

- Adenoidectomy is successful in improving in 50% of operated children. Whether this is due to the fact that the symptoms were related to adenoiditis per se or to the elimination of the contribution of the adenoids to sinus disease is not clear.
Treatment evidence and recommendations for children with chronic rhinosinusitis

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Level</th>
<th>Grade of recommendation</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>nasal saline irrigation</td>
<td>Ia</td>
<td>A</td>
<td>yes</td>
</tr>
<tr>
<td>therapy for gastro-oesophageal reflux</td>
<td>III</td>
<td>C</td>
<td>no</td>
</tr>
<tr>
<td>topical corticosteroid</td>
<td>IV</td>
<td>D</td>
<td>yes</td>
</tr>
<tr>
<td>oral antibiotic long term</td>
<td>no data</td>
<td>D</td>
<td>unclear</td>
</tr>
<tr>
<td>oral antibiotic short term &lt;4 weeks</td>
<td>Ib(-)#</td>
<td>A(-)*</td>
<td>no</td>
</tr>
<tr>
<td>intravenous antibiotics</td>
<td>III(-)##</td>
<td>C(-) **</td>
<td>no</td>
</tr>
</tbody>
</table>

# Ib (-): Ib study with a negative outcome
*A(-): grade A recommendation not to use
###III(-): level III study with a negative outcome
**C(-): grade C recommendation not to use

web: www.ep3os.org, rhinologyjournal.com
CRSsNP in young children management scheme for (ENT-) specialists

2 symptoms: one of which should be nasal obstruction or discoloured discharge
+/- frontal pain, headache
+/- cough
ENT examination including endoscopy
consider CT scan
check for allergy
consider diagnosis and treatment of co-morbidities

mild
VAS 0-3
nasal irrigation
nasal steroids
follow-up + nasal irrigation topical steroids

failure after 3 months

moderate - severe
VAS >3-10
+ consider culture
+ consider long term antibiotics
CT scan
consider adenoidectomy and sinus irrigation
consider FESS

severe frontal headache
frontal swelling
signs of meningitis
neurological signs

urgent investigation and intervention

consider other diagnosis
unilateral symptoms
bleeding
crusting
cacosmia
orbital symptoms:
peri-orbital oedema/erythema
displaced globe
double or reduced vision
ophthalmoplegia

web: www.ep3os.org, rhinologyjournal.com
European Position Paper on rhinosinusitis and nasal polyps

FREE DOWNLOAD:
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www.ep3os.org

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