

SINUSITIS/RHINOSINUSITIS

Prohibited Substances: Pseudoephedrine, glucocorticoids

1. Introduction

Sinusitis refers to inflammation of the sinuses only while the more clinically relevant term should be Rhinosinusitis which refers to inflammation of both the sinus and the nasal mucosa. Rhinosinusitis is a frequently occurring disease, with significant impact on athletic performance in both competition and training. There are two types of rhinosinusitis: acute bacterial rhinosinusitis (ABRS) and chronic rhinosinusitis (CRS).

2. Diagnosis

a. Medical History

ABRS is a clinical diagnosis with upper respiratory tract infection (URTI) signs and symptoms of more than 7 days duration without improvement or improvement which is then followed by worsening. The two main causative agents of ABRS are *Streptococcus pneumoniae* and *Haemophilus influenzae*.

CRS is an inflammatory disease involving the nasal mucosa and paranasal sinuses. Symptoms of CRS are usually of lesser intensity than those of ABRS, but their duration exceeds the 4 weeks commonly used as the upper limit for the diagnosis of ABRS. The main bacterial causative agents of CRS are *Streptococcus pneumoniae*, *Haemophilus influenzae* and anaerobes, but CRS can also be related to allergy, nasal polyps, mechanical factors or without obvious cause. A diagnosis of CRS is probable if 2 or more major symptoms are present for at least 12 weeks along with objective documentation of inflammation of the paranasal sinuses or nasal mucosa by either sino-nasal endoscopy or by CT scan.

b. Diagnosis Criteria

ABRS Symptom Table

Facial **P**ain/pressure/fullness

Nasal **O**bstruction

Nasal or postnasal purulent **D**ischarge

Smell: Hyposmia/anosmia

The diagnosis of ABRS requires the presence of ≥ 2 PODS symptoms, one of which must be O or D, and symptom duration of $>7-10$ days without improvement or worsening after initial improvement of symptoms (Desrosiers et al, 2011).

The diagnosis is based on history and physical examination. Nasal culture and sinus aspirates are not necessary. Radiological imaging is not required for uncomplicated ABRS.

Chronic Rhinosinusitis (CRS)

CRS is diagnosed on clinical grounds but must be confirmed with at least 1 objective finding on endoscopy or computed tomography (CT) scan.

CRS Symptom Control

Facial Congestion/fullness

Facial Pain/pressure/fullness

Nasal Obstruction

Nasal purulence/discolored postnasal Discharge

Smell: Hyposmia/anosmia

A diagnosis requires at least 2 CPODS present for 8-12 weeks, plus documented inflammation of the paranasal sinuses or nasal mucosa. CRS is a clinical diagnosis and must be confirmed with at least 1 objective finding such as nasal purulent nasal polyposis, on endoscopy or sinus opacification on CT scan. Objective testing is necessary to rule out the differential diagnosis of migraine, dental abscesses, allergic rhinitis, and atypical facial pain syndromes.

3. Treatment

General principles

For viral and bacterial rhinosinusitis of mild or moderate intensity, analgesics, topical intranasal glucocorticoids, and nasal saline irrigation may be used for symptomatic relief. Watchful waiting (without antibiotics) or initial antibiotic therapy for adults should be chosen depending of the evolution of symptoms. Patients with severe symptoms, or with underlying medical conditions conferring reduced immunity or an increased risk of complications (e.g., congestive heart failure) should be treated with antibiotics as part of initial management and also assessed for presence of complications.

a. Prohibited Treatments

i. Pseudoephedrine:

The use of oral decongestant (pseudoephedrine) (PSE) and 1st generation (sedating) anti-histamine combination (if available) is mainly reserved for bouts of acute exacerbations of sinusitis. An athlete with well-managed CRS should not have a regular need for the administration of PSE. Please note that PSE is prohibited “in-competition” only (see Caution below). A TUE is not required for out-of-competition use although if the athlete tests positive in-competition due to out-of-competition use, they may request a retroactive TUE as per Article 4.1e of the ISTUE.

- Route: Oral
- Frequency: As indicated on the manufacturer’s label.
- Antihistamine preparations are not prohibited

- Although each case must be judged individually, it would be highly unlikely for a TUE to ever be granted for suprathreshold dosages of PSE as other reasonable treatment alternatives exist.
- Recommended duration: Up to 4 weeks as needed for symptom control.

CAUTION: Pseudoephedrine is prohibited in-competition when its concentration in urine is greater than 150 micrograms per milliliter (as per the WADA Prohibited List).

The threshold level has been established based on the intake of therapeutic doses of PSE, defined as a maximum daily dose of 240mg PSE taken either as:

- 4 daily administrations (one every 4-6 hours) of a 60mg pill (or 2x30mg pills), or
- 2 daily administrations (one every 12 hours) of a 120mg pill
- (extended release), or
- 1 daily administration of a 240mg pill (extended release).

Although rare, it is possible that the established threshold level may be reached by some individuals taking therapeutic dosages, particularly 6-20 hours after the extended-release pill. Therefore, in order to avoid an AAF, athletes are advised to stop taking PSE pills 24 hours before the in-competition period.

Any TUE application should demonstrate the presence of the condition as evidenced by history and physical examination. In addition, the physician must explain why the prescribed treatment was the most appropriate, e.g., based on experience, side-effect profiles or other medical justifications, including where applicable, geographically specific medical practice, and the ability to access the medication. Further, it is not always necessary to try and fail alternatives. However, it is not common that an athlete would need to take suprathreshold dosages and therefore require a TUE.

ii. Systemic Glucocorticoids (GCs)

A short course of GCs (such as prednisone 30-40 mg) may be necessary in chronic rhinosinusitis (with or without polyps) either for initial control and early disease management, or for the treatment of recurrences or exacerbations. Ongoing treatment with systemic GCs is rare unless complicated nasal polyposis is present.

- Route: Oral
- Frequency: OD (Daily)
- Recommended duration: short period of time such as 4-7 days.
- If treatment of a longer duration is required for nasal polyposis, a referral to an otorhinolaryngologist (ENT surgeon) should occur.
- TUE requirements: A TUE is required for use of oral glucocorticoids in-competition. The application should demonstrate a clear diagnosis of chronic rhinosinusitis.

As of the 2022 Prohibited List, oral, rectal or any injectable routes of administration of glucocorticoids (GCs) are prohibited in-competition only. However, an in-competition urine sample may show GC levels above the established laboratory reporting levels even though administration occurred out-of-competition. In accordance with the Code, a resulting positive doping test, known as an adverse analytical finding (AAF), could render the athlete liable to

a sanction under the concept of Strict Liability. However, as per ISTUE Article 4.1e, the athlete is permitted to apply retroactively for a TUE if there is an in-competition AAF from out-of-competition use.

b. Non-Prohibited Alternative Treatments

- Intranasal glucocorticoids sprays
- Oral decongestants or nasal decongestant sprays
- Antibiotics (if a bacterial infection)

Consequences to Health if not treated

Failure to treat sinusitis or a failed response to treatment can lead to chronic cough, orbital complications or intracranial neurological complications including blindness, ophthalmitis, meningitis, brain abscess, or osteomyelitis.

4. Treatment Monitoring

Treatment should be monitored by the treating physician to ensure efficacy of the treatment regimen. In situations where an athlete is self-treating with over-the-counter medications, the athlete should monitor their own symptoms and stop treatment once their symptoms have resolved, or as per the manufacturer's or physician's directions.

5. TUE duration

Generally, the duration of treatment tends to be short term, days to a few weeks.

6. Any Appropriate Cautionary Matters

An athlete that fails to respond to therapy or with severe symptoms, should be referred to an otolaryngologist specialist for investigation of other underlying conditions. Warning symptoms and signs include:

- Unusual severe symptoms
- Systemic toxicity
- Altered mental status
- Severe headache
- Swelling of the face, orbit or change in visual acuity

References

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