INTRODUCTION
The terms rhinitis and sinusitis have been superseded by rhinosinusitis, which represents the understanding that the two conditions usually coexist. Rhinosinusitis can be subdivided into acute and chronic. Acute rhinosinusitis (ARS) presents an enormous burden in primary care. It is estimated that around 1–2% of visits to a GP in Europe are for symptoms of ARS.1

ARS is seen across a wide spectrum of ages, but is less common in the paediatric group due to the relative immature development of the sinuses in children (maxillary and ethmoidal sinuses develop during gestation, whereas the frontal and sphenoid sinuses begin to develop at the age of 3 years but are not fully developed until late adolescence). A consequence of patients presenting to primary care is the associated high pharmacy costs. Ashworth et al found that a prescription for antibiotics was given in 92% of patients with symptoms of ARS.2

This article provides a summary of the current best evidence for the management of ARS in primary care and highlights the recent guidelines provided by the European Position Paper on Rhinosinusitis and Nasal Polyps (EPOS2012).3

AETIOLOGY AND PATHOPHYSIOLOGY
The paranasal sinuses are lined by pseudostratified ciliated columnar epithelia containing basal cells, columnar cells, and mucus-secreting goblet cells. Secretions aid humidification, olfaction, and filtration. Cilia are crucial to mucus clearance. The cilia can be damaged by smoking, chronic nasal disease, or genetic predisposition such as primary cilia dyskinesia. When the clearance of mucus from the paranasal sinuses to the meati of the nose is interrupted, mucus trapping can occur with increased risk of infection.

Viral causes of the common cold include respiratory syncytial virus (RSV), rhinovirus, parainfluenza, and influenza with rhinovirus being the most common. The commonest organisms in acute bacterial rhinosinusitis (ABRS) include Streptococcus pneumonia (41%) and Haemophilus influenza (35%). Other causes include anaerobes, Moraxella, Strep spp and Staphylococcus aureus.4

Most cases of ARS are viral. Bacterial rhinosinusitis occurs most commonly secondary to a viral infection. Other risk factors for ARS include allergies, cigarette smoking, and anatomical variation.5 Seasonal variations in the incidence of ARS have also been reported, with cases being much more likely during the first early months of the year.

DEFINITION AND DIAGNOSIS
The European Position Paper on rhinosinusitis and nasal polyps (EPOS 2012)3 presents an evidence-based approach to the treatment of all types of rhinosinusitis.

A definition of ARS in adults for use in primary care is:2

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.

ARS becomes chronic rhinosinusitis (CRS) when symptoms persist for more than 3 months. ARS can be considered as recurrent but only if the previous episode has fully resolved.

ARS in children is defined as:3

Sudden onset of two or more of the symptoms:
1. nasal blockage/obstruction/congestion
2. or discoloured nasal discharge
3. or cough (day and night time)

This diagnosis is open and makes differentiation from the common cold difficult.

A common cold (acute viral rhinosinusitis) has duration of symptoms of <10 days. Acute post-viral rhinosinusitis is seen when symptoms worsen after 5 days or symptoms are persistent beyond 10 days but <12 weeks duration. Finally, acute bacterial rhinosinusitis (ABRS) would be indicated by the presence of at least 3 of:

1. discoloured discharge (unilateral predominance);
2. severe local pain (unilateral predominance);
3. fever, that is, >38°C;
4. elevated inflammatory markers (CRP); and
5. ‘double sickening’ whereby the patient’s condition deteriorates.

The majority of patients presenting with symptoms of ARS will have a common cold. This is followed by post-viral rhinosinusitis and only a very small proportion of patients will have ABRS and therefore will be amenable to management with antibiotics.

There is no role for imaging for suspected ARS in primary care.

COMPLICATIONS OF ACUTE RHINOSINUSITIS

Although relatively rare, the sequelae of complications can be devastating. Complications can be divided into intracranial, bony (osseous), and orbital with the latter being most common. Orbital complications range from preseptal cellulitis to orbital abscess and cavernous sinus thrombosis. Intracranial complications usually result in encephalitis or abscess. Osteomyelitis can result from infection of the bone. Finally, an episode of ARS can become chronic if no resolution occurs.

MANAGEMENT

The management guidelines of ARS by GPs have been summed up by EPOS 2012. Referral for ARS to ENT should be immediate for any of the ‘red flag’ signs in Box 1.

Antibiotics

Young et al’s meta-analysis of antibiotic use in patients with ARS found that 15 patients would need to be treated with antibiotics before a benefit would be seen in a single case. The number needed to treat (NNT) was lower at 8 for those with a finding of purulent discharge in the pharynx. The review could not find a justification for the use of antibiotics in ARS, even in those patients with symptoms for more than 7–10 days. This highlights a pitfall in identifying patients with a bacterial cause who would benefit from antibiotics. It is difficult to directly compare studies where there is no consistent choice or dose of antibiotic. A Cochrane Review found only a small benefit in patients treated for ARS with symptoms longer than 7 days in primary care but 80% of patients not treated recover within 2 weeks anyway. A Dutch study reported an incidence of complications of 3 per million per population annually and the prescribing of antibiotics does not appear to reduce the rate of complications from ARS. A Cochrane Review did not find any deleterious results in patients with upper respiratory tract infections (URTIs) in whom antimicrobial therapy was delayed.

Therefore, patients should not be prescribed antibiotics routinely or a delayed antibiotic prescribing strategy could be employed. Antibiotics should be reserved for patients who are systemically unwell; symptoms are persistent beyond 10 days, a worsening of symptoms after 5 days, or in those with severe symptoms after this time period (clinically, severe local pain, fever, discoloured discharge, or double sickening). If antibiotics are prescribed after weighing up the risks and benefits, amoxicillin, doxycycline, or clarithromycin for 7 days can be considered, with co-amoxiclav as a backup if no improvement appears. INCS, either as monotherapy or adjuvant to antibiotics, show no signs of improvement, then referral to ENT is required.

Steroids

Intranasal corticosteroids (INCS) form the mainstay of treatment in rhinosinusitis. Meltzer et al conducted a large trial of 981 patients. They found INCS as monotherapy in ARS provided a significant improvement in symptoms compared to placebo (P < 0.001) and amoxicillin (P = 0.002). The same author found INCS to increase the number of ‘minimal-symptom’ days in patients suffering ARS. A Cochrane Review also supported the use of INCS, either as monotherapy or adjuvant to antibiotics when indicated but these studies also relied on the confirmation of diagnosis.
REFERENCES


18. Provenance
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Competing interests
[No competing interests]

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