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PRACTICE

UNCERTAINTIES

What treatments are effective for common cold in adults and children?

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What you need to know

- Quality evidence to say whether over-the-counter treatments work for nasal symptoms of the common cold is limited.
- For adults, consider a trial of decongestants alone, or with antihistamines or analgesics to alleviate bothersome nasal symptoms.
- Do not prescribe decongestants to children under 12, as evidence of their effectiveness is limited and associated risks may exist.

The common cold is usually caused by viruses and is mostly self limiting,[1] but it can have a substantial impact on work, school,[2] use of health services, and money spent on medications. Children have around 6-8 colds per year and adults have 2-4.[3 4]

Many over-the-counter (OTC) treatments for the common cold claim to alleviate nasal symptoms, such as congestion, rhinorrhoea (runny nose), and sneezing. Table 1 lists commonly used drugs. Evidence for the effectiveness of these treatments is limited and of low quality, and clear guidance is lacking.[5] Long term use of nasal decongestants is known to lead to chronic nasal congestion.[6]

What is the evidence of uncertainty?

Search strategy and study selection

We searched the Cochrane Library for systematic reviews that investigate the effectiveness of treatments for the common cold. If only a protocol or no Cochrane review was available, we searched PubMed for other systematic reviews on the topic. If no systematic reviews were found, we searched for individual randomised controlled trials of commonly used treatments (fig 1, table 2). We extracted data on the subjective severity and duration of nasal symptoms (nasal congestion, rhinorrhoea, and sneezing) and adverse events. We extracted the number of studies and participants, and where available, used pooled results. If pooled results were not available, we assessed whether the findings were in favour of the active treatment.

Adults

We found Cochrane reviews on treatments such as decongestants, antihistamines, analgesics, intranasal corticosteroids, herbal remedies, and vitamins and minerals (zinc) in adults with common cold. Commonly reported primary outcomes in the included studies are nasal resistance measures or outcomes such as clinical cure or composite symptom scores. Only a few studies included in these reviews report on bothersome nasal symptoms, such as congestion, rhinorrhoea, and sneezing. In summary, low quality evidence suggests that decongestants (either in monotherapy or in combination with antihistamines and/or analgesics) have a small effect on nasal symptoms (fig 1). Harms include an increased risk of insomnia, drowsiness, headache, or gastrointestinal upset (fig 1, table 2).[7 11] Long term use can lead to chronic nasal congestion. However, the recommended safe treatment duration for decongestants varies and seems to be based on expert opinion.

A Cochrane review[8] (four randomised controlled trials, 1466 participants) shows that sedating antihistamines are associated with relief of rhinorrhoea and sneezing compared with placebo, but not nasal congestion (two randomised controlled trials, 375 participants). Sedation was commonly reported, but there were no differences between groups (6 randomised controlled trials, 2265 participants). Studies with non-sedating antihistamines show an unclear effect on congestion (one randomised controlled trial, 53 participants), and no effect on rhinorrhoea (three randomised controlled trials, 838 participants), or sneezing (four randomised controlled trials, 456 participants) and no increased risk of adverse events compared with placebo.[8]

A Cochrane meta-analysis showed no effect of antibiotics on nasal symptoms, but the risk of adverse events was increased.[15] Evidence does not exist for the effectiveness of antivirals, and intranasal corticosteroids for nasal symptoms in the common

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cold, and their use is not recommended.[12 32] Acetaminophen/paracetamol and NSAIDs are sometimes prescribed for pain relief in common cold, but they do not appear to improve nasal congestion or rhinorrhoea.[9 10] Low quality evidence suggests intranasal ipratropium bromide reduces rhinorrhoea compared with placebo, but not nasal congestion. Nosebleeds, nasal dryness, and dry mouth are side effects.[13]

Nasal symptoms are not reported in trials investigating the effect of echinacea,[17] vitamin C,[16] zinc lozenges,[24-26] and heated humidified air or steam.[21] Echinacea does not seem to improve overall symptoms.[17] Zinc lozenges have been shown to reduce the duration but not severity of cold symptoms,[24-26] but the optimal composition and dosage of lozenges has not been established. No evidence exists for the use of heated humidified air or steam in the common cold.[21] A Cochrane review concludes that saline irrigations are not likely to be effective in adults.[20] We did not find trials studying the effect on common cold symptoms for the following treatments: probiotics,[27-29] garlic,[18] Chinese medicinal herbs,[30] vapour rub,[22] eucalyptus oil, honey,[31] ginseng,[23] and increased fluid intake.[33]

Children

Trials are lacking for children under 12, who carry the highest burden of common colds. A Cochrane review found low quality evidence that saline irrigations or drops may be effective and safe in young children.[20] A small number of trials report contradictory results for decongestants and antihistamines on nasal symptoms and safety in children.[7 8 11] Some products that contain decongestant may improve nasal symptoms in children, but their safety, especially in young children, is unclear. We did not find evidence to support the use of other common treatments and home remedies in children (such as heated humidified air or steam, analgesics, echinacea, probiotics, herbs, or vitamins).

Decongestants, antihistamines, and analgesics in monotherapy

A Cochrane review[7] (2 randomised controlled trials, 94 participants) comparing oral or intranasal decongestants with placebo found that 3-4 doses per day (over 5 days and up to 10 days) was associated with reduced severity of nasal congestion. Short term adverse events were no different between decongestants and placebo (7 randomised controlled trials, 1195 participants). No trials compared oral with intranasal routes.

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In a Cochrane review[9] (4 randomised controlled trials, 758 participants), investigating the effect of acetaminophen/paracetamol compared with placebo on pain and common cold symptoms, only one trial (n=60) reports specific nasal symptoms, noting an unclear effect on severity of symptoms and possible increase of nasal congestion in the acetaminophen group. Adverse events, such as sweating and gastrointestinal upset, were more common with high dose paracetamol (1000 mg) in another trial (n=392). A pooled analysis of 3 trials (n=199) showed no effect of NSAIDs on nasal congestion or rhinorrhoea compared with placebo, although sneezing was reduced (2 randomised controlled trials, n=159).[16] Adverse events, such as rash, oedema and gastro-intestinal complaints, were not different between groups (2 randomised controlled trials, n=220).

Combinations of decongestants, antihistamines, and analgesics

A Cochrane review[11] (27 randomised controlled trials, 5117 participants) evaluated the effect of different combinations of decongestants, antihistamines, and analgesics in the common cold.

Oral antihistamine decongestant combinations[11] and analgesic decongestant combinations may improve congestion and sneezing, but data could not be pooled because of heterogeneity. Patients taking combinations reported more adverse effects such as sedation, insomnia, and headache.[11]

Of three trials studying oral antihistamine-analgesic combinations, two (341 participants) showed no improvement of nasal congestion compared with placebo or acetaminophen. In one trial (150 participants) the combination was associated with less sneezing. Adverse events (nasal irritation, dry mouth, gastrointestinal upset) occurred in both groups (3 randomised controlled trials, 1508 participants).[11]

Oral antihistamine analgesic decongestant combinations[11] were consistently associated with reduced nasal congestion and rhinorrhoea compared with placebo (3 randomised controlled trials, 595 participants). It is unclear if adverse events were different between groups.

Ipratropium bromide

Low quality evidence finds that intranasal ipratropium bromide reduces rhinorrhoea compared with placebo, but not nasal congestion, however there is an increased risk of nosebleeds, nasal dryness, and dry mouth.[13] A trial with 786 participants reported that decongestant ipratropium bromide combination improved both nasal congestion and rhinorrhoea compared with placebo, with similar adverse events.[14]

Antibiotics

Antibiotics are not indicated for viral infections such as the common cold. A Cochrane meta-analysis[15] (6 randomised controlled trials, 1047 participants) showed that antibiotics did not reduce duration of purulent rhinitis (4 randomised controlled trials, 723 participants) or clear rhinitis (2 randomised controlled trials, 227 participants), but the risk of adverse events was increased (4 randomised controlled trials, 1267 participants). Effect on congestion was not reported and there was an unclear risk of bias overall.

Antivirals

A Cochrane review[32] concludes that none of the licensed antivirals were effective in reducing symptoms, and adverse events make them unacceptable for use in the common cold. This review was withdrawn in 2004 as unpublished data from the original review were not accessible.

Outcomes in children

Few trials investigate the effect of common cold treatments in children, showing only small effects (fig 1, table 2). In young children (1.5-60 months) sedating antihistamines were associated with shorter duration of rhinorrhoea,[8] and non-sedating

antihistamines with shorter duration of overall symptoms, but nasal symptoms were not reported.[8] Adverse events were either not reported (non-sedating) or not different (sedating).[8] The Cochrane review on combination treatments for common cold reported that a combination of acetaminophen decongestant antihistamine in children improved nasal congestion on day 5 (although not on day 3) compared with acetaminophen alone.[11] An NSAID decongestant combination reduced the duration of nasal congestion compared with pseudoephedrine or placebo.[11] Antihistamine-decongestant combinations did not show consistent effects on nasal symptoms.[11] Saline nasal irrigation may improve nasal congestion in older children and possibly reduce rhinorrhoea severity.[20] Vapour rub may improve nasal congestion (not rhinorrhoea), but at an increased risk of adverse events.[22]

A trial with echinacea does not report nasal symptoms, but shows it increases the risk of a rash.[17] The trial of ginseng did not report nasal symptoms,[23] nor did studies with honey.[5] Furthermore, we did not find any trials studying the effect of the following treatments in children with common cold: decongestants in monotherapy,[7] NSAIDs[10] or paracetamol[9] in monotherapy, intranasal corticosteroids,[12] intranasal ipratropium bromide,[13] antivirals,[32] eucalyptus oil,[22] fluid intake,[33] garlic,[18] heated humidified air,[21] Chinese medicinal herbs,[30] Pelargonium sidoides,[19] probiotics,[27-29] vitamin C,[16] and zinc.[25 26]

Is ongoing research likely to provide relevant evidence?

A search of International Clinical Trials Registry Platform using the terms “common cold” or “respirat*” yielded 17 references to ongoing trials. These trials use analgesic-decongestant-antihistamine combinations (n=3), an intranasal decongestant (n=1), Chinese (n=3) or other herbs (n=4), herbal steam inhalation (n=1), lactic acid bacteria (n=1), pelargonium (n=1), guaifenesin (n=1), and antivirals (n=2). Twelve of these trials include adults (and older children), four include only children, and one includes participants of all ages.

Most of these studies have reasonable sample sizes but few report on nasal symptoms. Five trials explicitly mention they will report on nasal symptoms, and only one of these includes children. Several traditional Chinese, Thai, and Indian herbal treatments are also studied, but none of these trials will provide information about the effect on nasal symptoms. It is unlikely that these will address the uncertainty. No evidence yet exists on the effect of guaifenesin, an expectorant used to treat cough, on nasal symptoms. This study may add to the evidence base.

What should we do in light of the uncertainty?

The common cold is self limiting and symptoms usually clear within 7 to 10 days.[34] Explain to patients that there are no “magic bullets” to relieve their symptoms and that very few OTC treatments are supported by evidence.

For adults with bothersome nasal symptoms, decongestants and antihistamines in monotherapy or in combination products are the best choice. However, the effect is small and although the adverse events are usually mild, some—such as sedation—can be disturbing. No evidence suggests that a tablet taken orally or a nasal spray is the more effective. Advise patients to use nasal decongestants for a maximum of 3 to 7 days.[35-38] Patients often take OTC decongestants before they consult the GP and commonly for more than just a few days.[6] They may not be aware that prolonged use can lead to chronic nasal congestion (rhinitis medicamentosa). None of the other commonly used OTC treatments have been shown to relieve nasal symptoms and many have not been studied at all. Based on the currently available evidence, reassurance that symptoms are self limiting is the best you can offer patients.

The evidence for common cold treatments in children is more limited. We do not recommend decongestant or formulations containing antihistamine in children under 6 and advise caution between 6 and 12 years.[35-38] There is no evidence that these treatments alleviate nasal symptoms and they can cause adverse effects such as drowsiness or gastrointestinal upset. Serious harm, such as convulsions, rapid heart rate and death have been linked to decongestant use in very young children. None of the other commonly used OTC and home treatments, such as heated humidified air, eucalyptus oil, or echinacea are supported by adequate evidence.

Explain that a cold is distressing but should pass in 7-10 days. If parents are concerned about their child’s comfort, saline nasal irrigations can be given to alleviate nasal symptoms.

Recommendations for future research

Large, well conducted randomised controlled trials should include

- *Population*: children, especially young children as they carry the highest burden of common colds
- *Intervention*: commonly used treatments such as nasal irrigations, steam inhalations or vaporizers with humidified air, eucalyptus or other aromatic oils, or vapour rub
- *Comparator*: other commonly used treatments or head-to-head comparisons of active products (such as oral or intranasal decongestants)
- *Outcome*: outcomes relevant to patients, eg, subjective nasal congestion rather than nasal patency, impact on daily life, short- and long term safety

Education into practice

- How do you discuss treatments for nasal symptoms of the common cold? With an adult? With the parent of a child?
- How would you explore duration of use for decongestant, and how would you address this issue?

What patients need to know

Common cold is usually self limiting—symptoms clear in 7 to 10 days. Your doctor may offer you medications to relieve headache, pain, or nasal congestion if these are bothersome.

- **Adults**
  - o If a blocked or runny nose, or sneezing related to a cold is bothering you, you can try using nasal decongestants for up to 3 to 7 days
  - o Beware of unintended effects such as drowsiness, insomnia, or headache
  - o Do not take decongestants longer than advised as long term use may lead to chronic nasal congestion, which is difficult to treat
  - o Other treatments have either not been effective in clinical trials or have not been studied at all
- **In children under 12**
  - o Saline nasal irrigations or drops can be used safely, but this may not give the desired relief
  - o Consult a doctor if symptoms are bothersome. Do not give children decongestants
  - o Vapour rub may relieve congestion but can cause skin rashes
  - o Other treatments, such as steam, humidified air, echinacea, or probiotics, are either not effective or have not been studied in children.

Information resources for patients

NHS Choiceshttp://www.nhs.uk/conditions/Cold-common/Pages/Introduction.aspx

Definition of common cold, symptoms, treatment, complications, children. Free of charge. No registration needed

Mayo Clinichttp://www.mayoclinic.org/diseases-conditions/common-cold/home/ovc-20199807#

Overview, symptoms and causes, diagnosis and treatment, self-management. Free of charge. No registration needed

How patients were involved in the creation of this article

We asked 10 customers seeking OTC treatments for the common cold in a community pharmacy in Belgium what concerned them most when they had a cold. This revealed a strong focus on managing nasal symptoms. Based on this, we decided to focus on the effect of commonly used treatments on subjective nasal symptoms in common cold. A patient reviewer acknowledged that while there is no clear cut way to resolve symptoms of nasal congestion, appropriate treatment options can be discussed for adults and for children. We have now presented the evidence for common treatments for adults and children separately and also clarified these in the section on 'what patients need to know'.

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Tables

Table 1| Drugs used to treat symptoms in common cold

Decongestant	
Sympathomimetic: oral	Ephedrine hydrochloride, pseudoephedrine hydrochloride, phenylephrine hydrochloride
Sympathomimetic: intranasal	Naphazoline nitrate, oxymetazoline hydrochloride, tramazoline hydrochloride, xylometazoline hydrochloride
Antihistamine	
Older, "first generation," sedating	Alimemazine tartrate, chlorphenamine maleate, clemastine, cyproheptadine hydrochloride, dimethindene maleate, hydroxyzine hydrochloride, ketotifen, promethazine hydrochloride
Newer, "second generation," non-sedating	Acrivastine, azelastine hydrochloride, bilastine, cetirizine hydrochloride, desloratadine, fexofenadine hydrochloride, levocabastine hydrochloride, levocetirizine hydrochloride, loratadine, mizolastine, olopatadine hydrochloride
Analgesic	Acetaminophen/paracetamol
	Non-steroidal anti-inflammatory drugs (NSAIDs):
	acetylsalicylic acid (aspirin), ibuprofen, naproxen
Nasal corticosteroids	Beclomethasone diproprionate, budesonide, ciclesonide, fluticasone furoate/propionate, flunisolide, mometasone furoate, triamcinolone acetonide
Antimuscarinic	**Ipratropium bromide**
Saline nasal irrigation	**Sodium chloride 0.9% (saline)**

Availability and OTC status of the products vary by country

* Both oral and intranasal

** Intranasal

Table 2| Efficacy (subjective nasal symptoms) and harm of common cold treatments in adults and children: overview of the available evidence from Cochrane reviews and clinical trials

Treatment option	Outcome	Adults: Included studies	Adults: Effect
Decongestants Cochrane review[7]	**Congestion**	n=94; 2 RCTs	**Small effect on severity** : Pooled effect after 3 hours: SMD 0.49 (95% CI 0.07 to 0.92)
	Rhinorrhoea	Not reported	
	Sneezing	Not reported	
	Adverse events	n=1195; 7 RCTs	**No increased risk:** Pooled risk: OR 0.98 (95% CI 0.68 to 1.40)
Sedating antihistamines Cochrane review[8]	**Congestion**	n=375; 2 RCTs	**No effect on severity** Pooled effect after day 1: MD −0.07 (95% CI −0.29 to 0.15); scale 0-4
		n=27; 1 RCT	**Unclear effect on duration:** No pooling: 1 RCT shows no effect
	Rhinorrhoea	n=1466; 4 RCTs n=1465; 4 RCTs	**Small effect on severity** Pooled effect after day 1: MD −0.04 (95% CI −0.13 to 0.06); scale 0-4 Pooled effect after day 2: MD −0.18 (95% CI −0.27 to −0.08); scale 0-4
		n=27; 1 RCT	**Unclear effect on duration** No pooling: 1 RCT no effect
	Sneezing	n=1466; 4 RCTs n=1465; 4 RCTs	**Small effect on severity** Pooled effect after day 1: MD −0.07 (95% CI −0.15 to 0.00); scale 0-4 Pooled effect after day 2: MD −0.29 (95% CI −0.38 to −0.21) scale 0-4)
		n=27; 1 RCT	**Unclear effect on duration** No pooling: 1 RCT no effect
	Adverse events	n=2265; 6 RCTs	**No increased risk** Pooled OR 1.13 (95% CI 0.80 to 1.59)
Non-sedating antihistamines Cochrane review[8]	**Congestion**	n=53; 1 RCT	**Unclear effect on severity** No pooling: 1 RCT no effect
	Rhinorrhoea	n=383; 3 RCTs	**No effect on severity** Pooled effect after day 4: MD −0.08 (95% CI −0.26 to 0.09); scale 0-4
	Sneezing	n=456; 4 RCTs	**Possibly no effect on severity** No pooling: 4 RCTs no effect
	Adverse events	n=215; 3 RCTs	**No increased risk** Pooled OR 1.21 (95% CI 0.52 to 2.81)
Paracetamol/ Acetaminophen Cochrane review[9]	**Congestion**	n=60; 1 RCT	**Unclear effect on severity** No pooling: increased nasal congestion
	Rhinorrhoea	Not reported	

Table 2 (continued)

Treatment option	Outcome	Adults: Included studies	Adults: Effect
	Sneezing	Not reported	
	Adverse events	1 RCT (n=392)	**Unclear risk** No pooling: more minor AE, not clear if differences between groups
NSAIDs Cochrane review[10]	**Congestion**	n=199; 3 RCTs	**No effect on severity** Pooled SMD −0.15 (95% CI −0.43 to 0.13)
	Rhinorrhoea	n=199; 3 RCTs	**No effect on severity** Pooled SMD 0.03 (95% CI −0.25 to 0.30)
	Sneezing	n=159; 2 RCTs	**Small effect on severity** Pooled SMD −0.44 (95% CI −0.75 to −0.12)
	Adverse events	n=220; 2 RCTs	**No increased risk** Pooled RR 2.94 (95% CI 0.51 to 17.03)
Antihistamine-decongestant combination Cochrane review[11]	**Congestion**	n=678; 5 RCTs	**Unclear effect on severity** No pooling: 3 RCTs (n=568) significant effect, 2 RCTs (n=110) no effect
	Rhinorrhoea	n=660; 4 RCTs	**Unclear effect on severity** No pooling: 2 RCTs (n=369) significant effect, 2 RCT (n=291) no effect
	Sneezing	n=574; 3 RCTs	**Possible effect on severity** No pooling: 3 RCTs significant effect
	Adverse events	n=842; 7 RCTs	**No increased risk** Pooled OR 1.58 (95% CI 0.78 to 3.21)
Antihistamine-analgesic combination Cochrane review[11]	**Congestion**	n=1508; 3 RCTs	**Unclear effect on severity** No pooling: 2 RCTs (n=341) no effect, 1 RCT (n=1167) significant effect
	Rhinorrhoea	Not reported	

Table 2 (continued)

Treatment option	Outcome	Adults	
		Included studies	Effect
	Sneezing	n=150; 1 RCT	**Unclear effect on severity** No pooling: significant effect on day 5
	Adverse events	n=1508; 3 RCTs	**Possibly no increased risk** No pooling: 3 RCTs no difference in AE
Analgesic-decongestant combination Cochrane review[11]	**Congestion**	n=1627; 5 RCTs	**Possible effect on severity** No pooling: 4 RCTs (n=1436) significant effect; 1 RCT (n=191) no effect
	Rhinorrhoea	n=679; 3 RCTs	**Possibly no effect on severity** No pooling: 3 RCTs no effect
	Sneezing	n=621; 2 RCTs	**Possibly no effect on severity** No pooling: 2 RCTs no effect
	Adverse events	n=1440; 5 RCTs	**Increased risk** Pooled OR 1.71 (95% CI 1.23 to 2.37; NNH 14)
Antihistamine-analgesic-decongestant combination Cochrane review[11]	**Congestion**	n=595; 3 RCTs	**Possible effect on severity** No pooling: 3 RCTs significant effect
	Rhinorrhoea	n=595; 3 RCTs	**Possible effect on severity** No pooling: 3 RCTs significant effect
	Sneezing	n=70; 1 RCT	**Unclear effect on severity** No pooling: no effect
	Adverse events	n=595; 3 RCTs	**Unclear risk** No pooling: unclear if differences between groups
Intranasal corticosteroids Cochrane review[12]	**Congestion**	Not reported	
	Rhinorrhoea	Not reported	
	Sneezing	Not reported	
	Adverse events	n=200; 1 RCTs	**Unclear risk** No pooling: no differences
Intranasal ipratropium bromide Cochrane review[13]	**Congestion**	n=1081; 4 RCTs	**Possibly no effect on severity** No pooling: 4 RCTs no significant effect
	Rhinorrhoea	n=1959; 4 RCTs	**Possible effect on severity** No pooling: 4 RCTs significant effect
	Sneezing	Not reported	
	Adverse events	No RCTs available	**Increased risk** Epistaxis: OR 3.21 (95% CI 1.68 to 6.13) Nasal dryness: OR 2.55 (1.50 to 4.33) Dry mouth: OR 3.59 (1.38 to 9.38) Other AE: not significant
Decongestant - ipratropium bromide combination	**Congestion**	n=786; 1 RCT	**Unclear effect on severity** No pooling: significant effect after 24 hrs

Table 2 (continued)

Treatment option	Outcome	Adults	
		Included studies	Effect
Systematic review[14]	**Rhinorrhoea**	n=786; 1 RCT	**Unclear effect on severity** No pooling: significant effect after 24 hrs
	Sneezing	Not reported	
	Adverse events	n=786; 1 RCT	**Unclear risk** No pooling: significantly higher incidence of blood-tinged mucus, epistaxis, nasal passage irritation, and nasal dr with ipratropium bromide
Antibiotics	**Congestion**	Not reported	
Cochrane review[15]	**Rhinorrhoea**	n=723; 4 RCTs	**No effect on duration/persistence of purulent rhinitis** Pooled RR 0.73 (95% CI 0.47 to 1.13)
		n=227; 2 RCTs	**No effect on duration/persistence of clear rhinitis** Pooled RR 0.58 (95% CI 0.23 to 1.48)
	Sneezing	No RCTs available	
	Adverse events	n=1267; 4 RCTs	**Increased risk** Pooled RR 2.62 (95% CI 1.32 to 5.18)
Vitamin C Cochrane review[16]	**Congestion, rhinorrhoea and sneezing**	Not reported	
	Adverse events	n=4556; 7 RCTs	aaaaaaaaaaaaaaaaaaaabbb **No increased risk** No pooling: no difference, nature of AE not reported
Echinacea Cochrane review[17]	**Congestion, rhinorrhoea and sneezing**	No RCTs available	
	Adverse events	n=1108; 7 RCTs	**Possibly no increased risk** No pooling: 1 RCT increased risk, 6 RCTs no difference, AE not reported
Garlic Cochrane review[18]	**Congestion, rhinorrhoea and sneezing**	Not reported	
	Adverse events	n=146; 1 RCT	**Unclear risk** No pooling: Unclear if different
Pelargonium sidoides extract Cochrane review[19]	**Congestion**	n=103; 1 RCT	**Unclear effect on severity** No pooling: Significant effect by day 5
	Rhinorrhoea	Not reported	
	Sneezing	Not reported	
	Adverse events	n=103; 1 RCT	**Unclear risk** No pooling: No difference in AE

Table 2 (continued)

Treatment option	Outcome	Adults: Included studies	Adults: Effect
Saline nasal irrigation Cochrane review[20]	**Congestion**	n=205; 2 RCTs	**Possibly no effect on severity** No pooling: 2 RTCs no effect on day 3
	Rhinorrhoea	No RCTs available	
	Sneezing	No RCTs available	
	Adverse events	n=143; 1 RCT	**Unclear risk** No pooling: no difference in AE
Heated humidified air Cochrane review[21]	**Congestion, rhinorrhoea, and sneezing**	No RCTs available	
	Adverse events	n=203; 3 RCTs	**Unclear risk** No pooling: minor AE, unclear if different
Vapour rub RCT[22]	**Congestion**	No RCTs available	
	Rhinorrhoea	No RCTs available	
	Sneezing	No RCTs available	
	Adverse events	No RCTs available	
Ginseng RCT[23]	**Congestion, rhinorrhoea, and sneezing**	No RCTs available	

Table 2 (continued)

Treatment option	Outcome	Adults	
		Included studies	Effect
	Adverse events	No RCTs available	
Antivirals[v 20], **zinc**,[24-26] **probiotics**,[27-29] **Chinese medicinal herbs**,[30] **honey**,[31] **eucalyptus oil**,[22] **fluid intake**[vi 36]	**Congestion, rhinorrhoea, sneezing and adverse events**	No RCTs available	

"No effect" indicates that data were pooled and the overall effect estimate was not statistically significant. A "possible effect" is based on a qualitative appreciation of the effects reporte size was based on what the authors reported and on the Cochrane Handbook (eg, a standardised mean difference of 0.2 to 0.49 represents a small, 0.5 to 0.79 a moderate, and ≥0.8 a results were consistent, we concluded there was a possible effect or possibly no effect. Quality of evidence was based on the GRADE assessment reported in the review (indicated wit review we assigned a GRADE assessment (see supplementary table); NSAIDs: non-steroidal anti-inflammatory drugs; GI: gastrointestinal; AE: adverse events; CI: confidence interval; risk.

Positive scores represent treatment benefit; aaaaaaaaaaaaaaaaaaaabbaaaaaaaaaaaaaaaaaaaabb negative scores represent treatment benefit

[i] This meta-analysis included one study that might have included children (n=60), although the age of the participants was not clear

[ii] It was not clear from the review which studies recorded adverse events, therefore we were not able to differentiate between adults and children

[iii] The review on antivirals has been withdrawn, no new updated Cochrane review has been published

[iv] The review on fluid intake did not identify any relevant trials

Figure

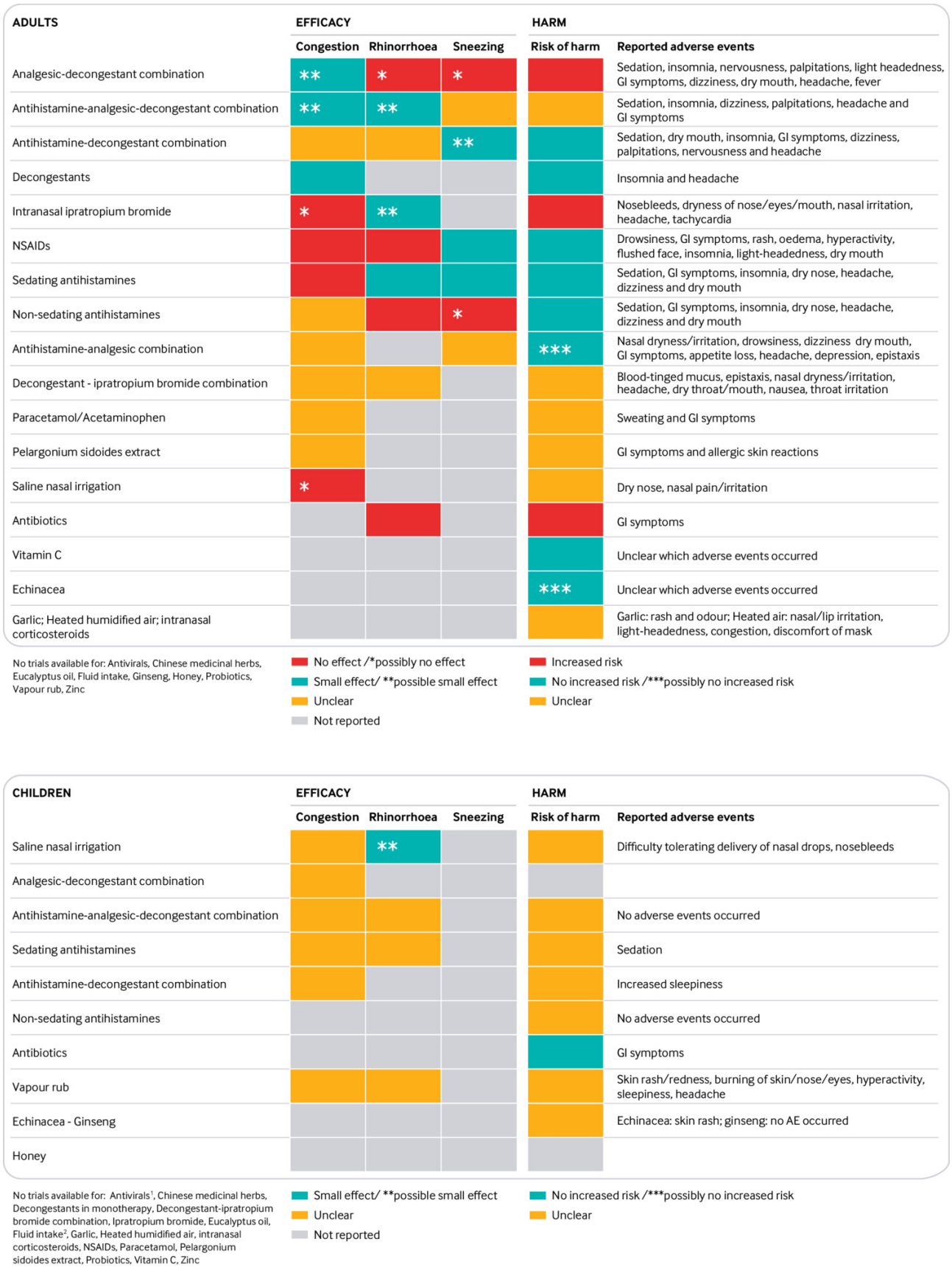

Fig. 1 Benefit and harm of common cold treatments in adults and children: a summary based on analysis of the evidence from Cochrane reviews and clinical trial. "No effect" indicates that data were pooled and the overall effect estimate was not statistically significant. A "possible" effect is based on a qualitative appreciation of the effects reported in individual trials that could not be pooled. Interpretation of the size of the effect was based on what the authors reported and on the Cochrane Handbook (eg, a standard mean difference of 0.2 to 0.49 represents a small, 0.5 to 0.79 a moderate, and ≥0.8 a large clinical effect). If no pooling was available but results were consistent, we concluded there

was a possible effect or possibly no effect. * The Cochrane review on antivirals has been withdrawn, no new updated Cochrane review has been published. † The Cochrane review on fluid intake did not identify any relevant trials