

Living FRIendly Summaries of the Body of Evidence using Epistemonikos (FRISBEE)

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Is antibiotic prophylaxis in nasal packing for anterior epistaxis needed?

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Abstract

Epistaxis is an extremely common problem that sometimes requires anterior nasal packing. Antibiotics are frequently indicated to prevent infectious complications, although the role of this measure is controversial. Searching in Epistemonikos database, which is maintained by screening 30 databases, we identified one systematic review including three primary studies, none of them randomized. We combined the evidence using meta-analysis and generated a summary of findings table following the GRADE approach. We concluded it is not clear whether prophylactic antibiotics reduce infectious complications in patients with nasal packing for anterior epistaxis because the certainty of the evidence is very low.

Problem

Epistaxis is a common problem that usually resolves spontaneously. However, in some cases it requires hospital care and interventions of different complexity. Among these, one of the most common is anterior nasal packing, after which antibiotics are commonly indicated in order to prevent infectious complications.

Methods

We used Epistemonikos database, which is maintained by screening more than 30 databases, to identify systematic reviews and their included primary studies. With this information we generated a structured summary using a pre-established format, which includes key messages, a summary of the body of evidence (presented as an evidence matrix in Epistemonikos), meta-analysis of the total of studies, a summary of findings table following the GRADE approach and a table of other considerations for decision-making.

Key messages

- It is not clear whether antibiotic prophylaxis decreases the risk of rhinosinusitis and/or other infectious complications in patients with nasal packing for anterior epistaxis because the certainty of the evidence is very low
- The baseline risk of infectious complications was very low in the studies.
- According to the available evidence, the potential benefits of antibiotics do not seem to outweigh the risks

About the body of evidence for this question

What is the evidence. See evidence matrix in Epistemonikos later	We found only one systematic review [1] including three non-randomized studies, two of them retrospective and one prospective [2],[3],[4].
What types of patients were included	All of the studies included patients treated in emergency rooms for spontaneous anterior epistaxis requiring nasal packing and/or other intervention.
What types of interventions were included	All studies compared use of prophylactic antibiotics against no antibiotics. Amoxicillin-clavulanic acid was used in all of the studies, although others as clarithromycin and piperacillin/tazobactam were also used [3],[4].
What types of outcomes were measured	The outcome measured by the studies was "infectious complications". This term refers to bacterial sinusitis, acute otitis media and staphylococcal toxic shock. It was measured through questionnaires and/or laboratory or radiological examinations when needed.

Summary of findings

Information on the effects of antibiotics in patients with nasal packing for epistaxis is based on three non-randomized studies involving 234 patients. All studies measured bacterial rhinosinusitis and staphylococcal toxic shock. The information on the adverse effects comes from a systematic review including 45 randomized controlled studies [5].

- It is not clear whether antibiotic prophylaxis decreases the risk of sinusitis in patients with nasal packing for anterior epistaxis. The certainty of the evidence is very low.
- It is not clear whether antibiotic prophylaxis reduces the risk of staphylococcal toxic shock in patients with nasal packing for anterior epistaxis. The certainty of the evidence is very low.

Antibiotics prophylactic for nasal packing in anterior epistaxis				
Patients	Patients who attend the emergency room with spontaneous anterior epistaxis and require nasal packing and/or other intervention			
Intervention	Prophylactic antibiotics			
Comparison	No prophylactic antibiotics			
Outcomes	Absolute effect*		Relative effect (95% CI)	Certainty of the evidence (GRADE)
	WITHOUT antibiotics	WITH antibiotics		
	Difference: patients per 1000			
Rhinosinusitis	9 per 1000	7 per 1000	RR 0.84 (0.06 to 12.76)	⊕○○○ ^{1,2,3} Very low
	Difference: 2 patients less per 1000 (Margin of error: 8 less to 105 more)			
Staphylococcal toxic shock	None of the patients in the studies presented this outcome		----	⊕○○○ ^{1,2,3} Very low
Adverse effects	The group treated with antibiotics had a higher rate of diarrhea and candidiasis compared with the placebo group, with a NNH of 10 and 27, respectively		----	⊕⊕⊕○ ¹⁻⁴ Moderate

RR: Risk ratio.
Margin of error = 95% confidence interval (CI).
NNH: Number needed to harm.
GRADE: evidence grades of the GRADE Working Group (see later in this article).

* The risk **WITHOUT antibiotics** is based on the risk in the control group of the trials. The risk **WITH antibiotics** (and its margin of error) is calculated from relative effect (and its margin of error).

¹ All of the studies are observational studies.
² We downgraded the certainty of the evidence in one level because the study that contributes more data is retrospective.
³ The certainty of the evidence was downgraded in one level for imprecision, because the confidence interval includes the possibility of both benefits and risks.
⁴ The certainty of the evidence was increased because the magnitude of the association.

About the certainty of the evidence (GRADE)*

⊕⊕⊕⊕

High: This research provides a very good indication of the likely effect. The likelihood that the effect will be substantially different† is low.

⊕⊕⊕○

Moderate: This research provides a good indication of the likely effect. The likelihood that the effect will be substantially different† is moderate

⊕⊕○○

Low: This research provides some indication of the likely effect. However, the likelihood that it will be substantially different† is high.

⊕○○○

Very low: This research does not provide a reliable indication of the likely effect. The likelihood that the effect will be substantially different† is very high.

*This concept is also called 'quality of the evidence' or 'confidence in effect estimates'.

† Substantially different = a large enough difference that it might affect a decision.

Other considerations for decision-making

To whom this evidence does and does not apply

- This evidence applies to patients visiting emergency rooms for spontaneous anterior epistaxis.
- It does not apply to patients with epistaxis produced by trauma or after surgery.

About the outcomes included in this summary

- The outcomes presented in the summary of findings table correspond to those critical for decision making according to the opinion of the authors.
- In the hypothetical case of no effect on the main outcomes and minimal or no adverse effects, other outcomes such as 'bad smell' noticed by some patients could become relevant

Balance between benefits and risks, and certainty of the evidence

- The evidence about the benefits and risks has very low certainty, so it is not possible to estimate an adequate balance.
- Both outcomes presented (rhinosinusitis and staphylococcal toxic shock) had a very low incidence (only two cases of rhinosinusitis and none of staphylococcal toxic shock), so any potential benefit would be of low absolute magnitude.

What would patients and their doctors think about this intervention

- Some doctors may decide not to prescribe antibiotics due to the known adverse effects of its administration as well as the possibility of increasing population resistance to antibiotics.
- It is also possible that some doctors decide to keep the use of antibiotics due to the high risk of changing the usual behavior based on very low certainty evidence. In this case, it is particularly important to inform patients about the uncertainty associated with this measure.

Resource considerations

- It is not possible to provide an adequate estimation of the cost-benefit because the certainty of the evidence is very low.
- Since antibiotics used have a relatively low cost, and adverse effects seem to be rare, it is likely that resources considerations would not be the main drivers of this decision.

Differences between this summary and other sources

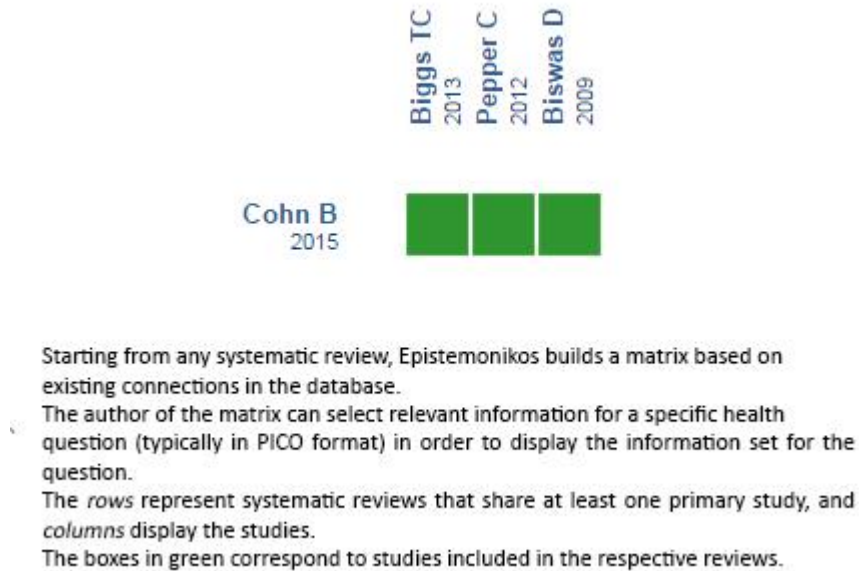
- The conclusions of this summary are consistent with the only systematic review identified.
- The findings are discordant with the main identified guideline, which recommends the use of antibiotics if the packing is in situ for more than 24 hours [6].

Could this evidence change in the future?

- The probability of new evidence changing what we know about is very high, given the very low certainty of the evidence.
- We did not identify ongoing studies assessing this question.

How we conducted this summary

Using automated and collaborative means, we compiled all the relevant evidence for the question of interest and we present it as a matrix of evidence.



Follow the link to access the **interactive version**: [Prophylactic antibiotics for anterior nasal packing in epistaxis](#)

Notes

The upper portion of the matrix of evidence will display a warning of “new evidence” if new systematic reviews are published after the publication of this summary. Even though the project considers the periodical update of these summaries, users are invited to comment in *Medwave* or to contact the authors through email if they find new evidence and the summary should be updated earlier. After creating an account in Epistemonikos, users will be able to save the matrixes and to receive automated notifications any time new evidence potentially relevant for the question appears.

The details about the methods used to produce these summaries are described here <http://dx.doi.org/10.5867/medwave.2014.06.5997>.

Epistemonikos foundation is a non-for-profit organization aiming to bring information closer to health decision-makers with technology. Its main development is Epistemonikos database (www.epistemonikos.org).

These summaries follow a rigorous process of internal peer review.

Conflicts of interest

The authors do not have relevant interests to declare.

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