

Review: Antibiotics reduce the duration and severity of travelers' diarrhea

De Bruyn G, Hahn S, Borwick A. Antibiotic treatment for travellers' diarrhoea. Cochrane Database Syst Rev. 2000;(3):CD002242 (latest version 21 May 2000).

QUESTION

In patients with travelers' diarrhea, are antibiotics more effective and safer than is placebo or another antibiotic in resolving diarrhea?

DATA SOURCES

Studies were identified by searching the Cochrane Infectious Diseases Group trials register, MEDLINE (from 1966), EMBASE/Excerpta Medica (from 1988), abstracts of conferences and meetings, and bibliographies of relevant studies and by contacting experts in the field.

STUDY SELECTION

Studies were selected if they were randomized controlled trials in any language, they involved adults or children ≥ 5 years of age who were traveling outside their usual country of residence for < 6 months and had non-bloody diarrhea lasting ≤ 14 days, and any antibiotic was compared with placebo or another antibiotic.

DATA EXTRACTION

Data were extracted independently by 2 reviewers on study quality (allocation concealment, generation of allocation sequence, and inclusion of all randomly allocated patients) and outcome measures (duration of

diarrhea [time to last unformed stool], severity [number of loose stools passed per 24-h period], and tolerability).

MAIN RESULTS

20 trials were included. 12 trials were placebo controlled (1474 patients). 10 of the placebo-controlled trials reported the primary outcome of time to last unformed stool. The data could not be pooled, but all 10 trials reported a shorter duration of diarrhea that was statistically significant among patients who received antibiotics (except in one group of patients who received ofloxacin) than among those who received placebo. In 6 trials reporting the number of patients cured of diarrhea by 72 hours, antibiotics were more effective than placebo (Table). 2 trials that reported on severity showed antibiotics to be more effective than placebo in relieving severity for each 24-hour period up to 72 hours: Patients receiving

antibiotics had a mean of 1.6 (95% CI 0.5 to 2.7) fewer unformed stools from 0 to 24 hours, 2.1 (CI 1.4 to 2.8) fewer from 25 to 48 hours, and 1.4 (CI 0.8 to 1.9) fewer from 49 to 72 hours. 5 trials reporting adverse effects showed that more side effects were reported by patients receiving antibiotics than by those receiving placebo (odds ratio 2.37, CI 1.5 to 3.8).

CONCLUSION

In patients with travelers' diarrhea, antibiotics reduce the duration and severity of diarrhea better than does placebo but are associated with increased side effects.

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Antibiotics vs placebo for travelers' diarrhea (6 trials)*

Outcome	Weighted event rates		RBI (95% CI)	NNT (CI)
	Antibiotics	Placebo		
Patients cured at 72 h	84%	50%	68% (49 to 89)	3 (3 to 4)

*Abbreviations defined in Glossary; RBI, NNT, and CI calculated from data in article.

COMMENTARY

De Bruyn and colleagues have done an excellent job with this meta-analysis given the limited information available from clinical trials. No doubt exists that duration of diarrhea can be statistically significantly shortened with the use of antibiotics. The main question that arises from these investigations, however, is the clinical significance of this finding. The primary outcome of how much shorter the time to last unformed stool could not be determined. The authors were clearly frustrated with this outcome, as they state in their own conclusions. Does this review help us in treating travelers with diarrhea? Options for therapy are antibiotic prophylaxis, antimotility agents, treatment with antibiotics once disease develops, or no drug therapy but treatment with rehydration as required.

The disease itself is difficult to typify because 25% to 50% of cases have no specific etiologic agent identified (1). The diarrheal component lasts for 1 to 5 days, depending on the etiologic agent, and is usually self-limited. Prevention strategies aimed at dietary controls have also been controversial because of poor compliance and uncertain effectiveness (2). Prophylaxis with bismuth preparations and antibiotics has been effective, but it must be taken continuously while traveling and

may be more expensive than symptomatic treatment alone. Patients who might benefit from this strategy are those who have the most to lose if they become sick, such as immunocompromised persons or executive travelers in a short-term, high-risk exposure situation.

The bottom line is that travelers' diarrhea is a self-limiting disorder that responds well to symptomatic treatment. Whether this treatment should be antibiotics or antimotility agents alone is not known. Furthermore, as this study shows, the clinical benefit in terms of time with symptoms is not clear. The current recommendation that travelers undergo pre-travel counseling and carry medications for symptomatic therapy is not changed by this information, but the need for further study is aptly illustrated.

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References

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