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Antibiotic prescription strategies for acute sore throat: a prospective observational cohort study

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Summary

Background

Data from trials suggest that antibiotics reduce the risk of complications of sore throat by at least 50%, but few trials for complications have been done in modern settings, and datasets of delayed antibiotic prescription are underpowered. Observational evidence is important in view of poor compliance with antibiotic treatment outside trials, but no prospective observational cohort studies have been done to date.

Methods

We generated a large prospective cohort from the DESCARTE study, and the PRISM component of DESCARTE, of 12 829 adults presenting with sore throat (≤ 2 weeks duration) in primary care. Our follow-up of the cohort was based on a detailed and structured review of routine medical records, and analysis of the comparison of three antibiotic prescription strategies (no antibiotic prescription, immediate antibiotic prescription, and delayed antibiotic prescription) to control for the propensity to prescribe antibiotics. Information about antibiotic prescription was recorded in 12 677 individuals (4805 prescribed no antibiotics, 6088 prescribed antibiotics immediately, and 1784 prescribed delayed antibiotics). We documented by review of patients' notes ($n=11\ 950$) the development of suppurative complications (eg, quinsy, impetigo and cellulitis, otitis media, and sinusitis) or reconsultation with new or non-resolving symptoms). We used multivariate analysis to control for variables significantly related to the propensity to prescribe antibiotics and for clustering by general practitioner.

Findings

164 (1.4%) of the 11 950 patients with information available developed complications; otitis media

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and sinusitis were the most common complications (101 patients [62%]). Compared with no antibiotic prescription, immediate antibiotic prescription was associated with fewer complications (adjusted risk ratio [RR] 0.62, 95% CI 0.43–0.91, estimated number needed to treat [NNT] 193) as was delayed prescription of antibiotics (0.58, 0.34–0.98; NNT 174). 1787 of the 11 950 patients (15%) reconsulted with new or non-resolving symptoms; the risk of reconsultation was also reduced by immediate (0.83, 0.73–0.94; NNT 40) or delayed antibiotics (0.61, 0.50–0.74; NNT 18).

Interpretation

Suppurative complications are not common in primary care and most are not serious. The risks of suppurative complications or reconsultation in adults are reduced by antibiotics, but not as much as the trial evidence suggests. In most cases, no antibiotic is needed, but a delayed prescription strategy is likely to provide similar benefits to an immediate antibiotic prescription.

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