

Letters

- Study conclusions should reflect results
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Study conclusions should reflect results

In their recent meta-analysis of the use of respiratory fluoroquinolones to treat community-acquired pneumonia, Vardakas and colleagues identified all-cause mortality in the intention-to-treat population as their primary outcome measure, but their main conclusion was that fluoroquinolone antibiotics were associated with higher treatment success than comparator antibiotics for severe forms of community-acquired pneumonia (treatment success was a secondary outcome).¹ The correct conclusion from their data should be that fluoroquinolones are no better than comparator antibiotics in the treatment of community-acquired pneumonia. A secondary conclusion should be that, in blinded and high-quality studies, there is no difference in mortality rate or treatment success for patients who receive fluoroquinolones versus comparator antibiotics. Moreover, it is unclear why the authors chose to include low-quality trials in their meta-analysis and to base their conclusions on such low-quality studies: this runs counter to common sense.

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Competing interests: None declared.

REFERENCE

1. Vardakas KZ, Siempos II, Grammatikos A, et al. Respiratory fluoroquinolones for the treatment of community-acquired pneumonia: a meta-analysis of randomized controlled trials. *CMAJ* 2008;179:1269-77.

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Three of the authors respond:

We thank Andrew Morris for his interest in our meta-analysis.¹ We chose mortality as our primary outcome because of the considerable mortality rate attributed to community-acquired pneumonia in several previous studies. However, the mortality rate for patients with pneumonia in several of the randomized controlled trials included in our meta-analysis was extremely low, and the mortality rate for patients in the subgroups with severe or bacteremic pneumonia was not reported. Therefore, we believe that the available data were too limited to reach a strong conclusion on this important outcome.

On the other hand, secondary outcomes such as treatment success may provide significant evidence regarding the effectiveness of antibiotic regimens. We stated in our article that macrolides and β -lactams (the comparators of fluoroquinolones in the randomized controlled trials included in the meta-analysis) are also effective for the treatment of community-acquired pneumonia. However, we believe that more data on the comparative effectiveness of various antibiotics are needed for patients with severe community-acquired pneumonia. Unfortunately, the available relevant blinded and high-quality randomized controlled trials enrolled only patients with mild or moderately severe pneumonia, a group in which the anticipated success rate would be higher for all antibiotics (compared with that in patients with severe community-acquired pneumonia). Thus, we elected to include all randomized controlled trials in our meta-analysis, an approach that is not unique in the literature; for example, the Cochrane Collaboration suggests including all the available evidence in the primary analysis and proceeding to sensitivity or subgroup analyses to refine the outcomes.² Finally, we cannot overemphasize that physicians should also be aware of the problems related to the use of the various antimicrobial agents, including fluoroquinolones: they may be associated with adverse

events such as arrhythmias,³ *Clostridium difficile*-associated diarrhea^{4,5} and the emergence of antimicrobial resistance.^{6,7}

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Factual error

Ann Silversides' article¹ about the accidental overdose death of Ryan Lucio in 2002 at The Children's Hospital of Eastern Ontario states "Some tragedies have become public, thanks to the US Food and Drug Administration (FDA) or a measure of investigative reporting. ... His (Ryan's) death became public because of an FDA inspection, the results of which were posted on the agency's website."

This statement is not based on facts. While the FDA inspection took