Azithromycin is effective in patients with chronic bronchitis


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Sir,

In their recent meta-analysis, Contopoulos-Ioannidis et al.1 concluded that azithromycin is more effective than the comparator antibiotics in patients with community-acquired pneumonia but not in patients with acute exacerbation of chronic bronchitis. The latter conclusion is based on a meta-analysis of 13 randomized controlled trials that did not show statistically significantly better efficacy of azithromycin (OR for treatment failure 0.64, 95% CI 0.31–1.32).

The results of the 13 trials were heterogeneous. Examination of the source of heterogeneity indicates one trial as an outlier. This trial had different features to the remaining 12 trials. Removal of this trial from the meta-analysis would restore homogeneity. Meta-analysis of the remaining 12 trials shows statistically significantly better efficacy of azithromycin (OR = 0.47, 95% CI 0.30–0.74).

An important criterion for performing meta-analysis is whether the studies are measuring the same underlying magnitude of effect.2 When there is statistical evidence of lack of homogeneity, calculating a pooled estimate of size effect is of dubious validity.3 There seems to be a clear indication that one outlier study does not belong to the same group of studies. The authors of the meta-analysis were aware that one trial was an outlier and that the results are heterogeneous (p. 693). Despite this, they ignored the heterogeneity and based their conclusions on the questionable common effect estimate.

Acute exacerbation of chronic bronchitis is a serious medical condition. Azithromycin seems to have a clear efficacy advantage compared with other antibiotics in treating this condition. Treatment with azithromycin is c. 50% more effective than treatment with the comparator antibiotics. That is a major clinical advantage that should translate into appropriate clinical recommendations and improved patient outcomes.

References


