Reviewer’s report

Title: Severe Pneumococcal Community-acquired Pneumonia: Prognosis in Patients Treated by Beta-Lactam and Quinolone

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Reviewer: Alberto Matteelli

Reviewer’s report:

This is a retrospective analysis comparing survival among patients with severe pneumococcal pneumonia in ICU receiving beta-lactam and either an older (ciprofloxacin / ofloxacin) or newer (levofloxacin) quinolone. Though performed on a limited sample of patients, the study finds a significant survival gain at day 15 independently associated with the use of newer quinolones. This finding is consistent with the knowledge of a greater efficacy of newer quinolones compared to the old ones on gram positive bacteria. However, it is surprising that it is shown on a sample of patients with penicillin sensitive pneumococcal pneumonia all receiving adequate penicillin therapy. The authors speculate that this observation may be justified by the synergy of these antibiotics.

The major limitation of the study, which is acknowledged by the authors, is the retrospective design and the fact that quinolones are compared during two different time periods, which introduces a strong probability of biases in favour of the newer quinolones (introduction of more effective support treatment and measures).

The overall relevance of the findings is limited since current treatment guidelines specifically mention that only newer quinolones should be used for the treatment of CAP: a prospective, randomised trial to demonstrate what this study suggests, may never be performed.

Specific comments

The title should state that the scope of the study is to compared newer and older quinolones.

Abstract: the objective of the analysis is to compare newer and older quinolones, rather than determining risk factors for mortality. For the latter objective the sample size would largely be inadequate.

Abstract: “three independent factors associated with survival in ICU” rather than outcome

Abstract: conclusions, levofloxacin is associated with lower mortality, rather than being more effective
In the introduction there is no mention on the ERS guidelines (Woodhead M., ERJ 2005) in which the recommended treatment regimen for CAP is a beta-lactam plus a macrolide OR a quinolone (levofloxacine, moxifloxacine). Please consider and comment.

Methods: amoxicillin and cefotaxime doses of 50 mg/kg/d are at the lower edge of the recommended range. Can the author specify that the mean administered doses were similar in Group A and Group B?

As specified in the methods the survival curves have been drafted and compared for each patients in each group. Does figure 1 show survival in group A compared to group B? If so, is it correct to label the figure as a comparison of the effect of beta-lactam plus old quinolones vs. beta-lactams plus newer quinolones?

Discussion, first sentence: the main finding of the study is that newer quinolones are associated with improved survival rather than being more effective on severe pneumococcal CAP.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interest