LETTER TO THE EDITOR

Author Response: Unanswered Questions and Contradictory Statements in the Antibiotics Prescription Guidelines

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We thank Nath et al. for their critical review of the recently published antibiotic prescription guidelines. They raise essential points regarding managing severe community-acquired pneumonia (sCAP). Various definitions of severe CAP have been described, with their advantages and limitations.[1,2] Martin-Loeches et al., while defining severe CAP, also highlighted the heterogeneity for ICU admission criteria in the absence of shock or need for mechanical ventilation.[1] However, the scope of these guidelines is the initial choice of antibiotic therapy in critically ill patients, not refining or debating definitions of severe pneumonia. Nath et al. rightly point to the definitive indication of systemic steroids, i.e., septic shock. Systemic steroid therapy in patients with refractory septic shock is a standard recommendation and common practice, which is not contradicted by these guidelines. Again, the management of septic shock was beyond the scope of these guidelines. Beyond its indication in refractory septic shock, systemic steroid administration in severe CAP is a rapidly evolving aspect of adjunctive therapy. Evidence regarding systemic steroids in severe CAP is evolving. Therefore, a review of evidence and recommendations on this aspect was included in these guidelines. The experts chose hydrocortisone as it was the most widely studied; the dose was based on the most significant positive randomized controlled trial.[3,4] Various studies with their critique have been described in the literature review. Based on available evidence, experts involved in developing these guidelines thought that systemic steroids should be prescribed on a case-to-case basis. The evidence available is summarized in the document, along with strengths and weaknesses, so the audience can review and critique it to decide. Regarding inhaled antibiotics in community-acquired pneumonia, readers were referred to relevant studies and evidence in the subsequent section on ventilator-associated pneumonia. There was no published literature to cite as evidence. Yet, the expert committee opined that adjunctive inhaled antibiotics could be an essential therapeutic consideration in severe CAP, so it was recommended as a helpful practice point. The authors are requested to refer to the grading adopted by the expert committee (Table 1); a "useful practice point" refers to a recommendation that experts consider clinically useful without observational or trial data to back the practice.

We also thank Das et al. for their keen interest in the guidelines document published in a recent edition of IJCCM. Regarding the organisms causing peritonitis, the word Enterobacteriaceae meant other members of the family (other than *E. coli* and *Klebsiella*, which are mentioned in the beginning as the most common organisms). We agree with the authors that carbapenems and piperacillin-tazobactam have sufficient anti-anaerobic activity and usually do not warrant the addition of an agent with activity against anaerobes. However, other cephalosporins and beta lactam-beta lactamase combinations like cefoperazone-sulbactam have variable anaerobic coverage, and metronidazole is recommended as combination therapy. Empiric addition of metronidazole to cover for severe biliary tract-related peritonitis, biliary enteric anastomoses, and post-biliary stenting; various international guidelines have recommended combinations of cephalosporins, beta-lactam-beta-lactamase inhibitors, carbapenems with metronidazole in high severity intra-abdominal infections.[5,6] In trials of newer beta-lactam beta-lactamase combinations for complicated abdominal infections, most trials have used combination therapy with metronidazole.[7] Metronidazole, in addition, is an essential empiric antibiotic to cover tropical infections (Amebiasis), which are quite prevalent in Asia and low-middle-income countries.[5] In the context of initial empiric therapy for secondary peritonitis in intensive care units, there is very sparse new literature on the treatment regimens for secondary peritonitis except for small case series, which could impact the guideline recommendations. As it is a usual practice to add metronidazole as specific anaerobic therapy in secondary peritonitis, though there is no evidence for improved outcomes with dual anaerobic coverage for carbapenems, experts opined that for this subgroup with high mortality, initial coverage should not omit metronidazole until more evidence becomes available. However, these recommendations, like any other guideline, should be applied in a clinical context on an individualized basis.

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References

1. Martin-Loeches I, Torres A, Nagavci B, Aliberti S, Antonelli M, Bassetti M, et al. ERS/ESICM/ESCMID/ALAT guidelines for the management of severe community-acquired pneumonia. Intensive Care Med 2023;4:1–18. DOI: 10.1007/s00134-023-07033-8.
2. Niederman MS, Torres A. Severe community-acquired pneumonia. Eur Respir Rev 2022;31(166):220123. DOI: 10.1183/16000617.0123-2022.
3. Saleem N, Kulkarni A, Snow TAC, Ambler G, Singer M, Arulkumaran N. Effect of corticosteroids on mortality and clinical cure in community-acquired pneumonia: A systematic review, meta-analysis, and meta-regression of randomized control trials. Chest 2023;163(3):484–497. DOI: 10.1016/j.chest.2022.08.2229.
4. Dequin PF, Meziani F, Quenot JP, Kamel T, Ricard JD, Badie J, et al. Hydrocortisone in severe community-acquired pneumonia. N Engl J Med 2023;388(21):1931–1941. DOI: 10.1056/NEJMoa2215145.
5. Kurup A, Liau KH, Ren J, Lu MC, Navarro NS, Farooka MW, et al. Antibiotic management of complicated intra-abdominal infections in adults: The Asian perspective. Ann Med Surg 2014;3(3):85–91. DOI: 10.1016/j.amsu.2014.06.005.
6. Solomkin JS, Mazuski JE, Bradley JS, Rodvold KA, Goldstein EJC, Baron EJ, et al. Diagnosis and management of complicated intra-abdominal infection in adults and children: Guidelines by the surgical infection society and the infectious diseases society of America. Clin Infect Dis 2010;50(2):133–164. DOI: 10.1086/649554.
7. Leone S, Damiani G, Pezone I, Kelly ME, Cascella M, Alfieri A, et al. New antimicrobial options for the management of complicated intra-abdominal infections. Eur J Clin Microbiol Infect Dis 2019;38(5):819–827. DOI: 10.1007/s10096-019-03533-y.