

Unanswered Questions in the Guidelines for Antibiotic Prescription in Critically Ill Patients

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Keywords: 28-day mortality, Community acquired pneumonia, Hydrocortisone, Shock.

Indian Journal of Critical Care Medicine (2024): 10.5005/jp-journals-10071-24704

Dear Editor,

With great interest, we read the first-ever comprehensive Indian guideline for prescribing antibiotics to critically ill patients.¹ While we congratulate the authors for the hard work that saw the guidelines being formulated, we are disappointed as it left several questions unanswered and the weak evidence that the authors relied upon for making the recommendations.

Firstly, the authors mentioned severe community-acquired pneumonia (sCAP) but failed to define sCAP. Hence, for the definition of sCAP, we have to revert to the European Respiratory Society (ERS) guideline, which, for the first time, came out with recommendations for the management of sCAP.² They defined sCAP as those patients of CAP who required admission to an ICU because they needed support for one or more organs. Vague, it might be, but that is all we have for now as a definition of sCAP. This also makes the statement on page 3, which states, 'severe CAP requiring ICU admission' redundant, as sCAP itself indicates the need for ICU admission.

Secondly, regarding the evidence for recommending hydrocortisone 200 mg/day for seven days in sCAP, the authors aptly rejected the role of methylprednisolone in sCAP, which was recommended by the ERS guideline but faced criticism.³ The authors cited one meta-analysis, that included six trials that used hydrocortisone in patients with CAP, in varying doses and for various durations.⁴ Interestingly, none of these trials used hydrocortisone in the regime recommended in the antibiotic prescription guideline.¹ The other meta-analysis also failed to show any mortality benefit with the use of hydrocortisone, although they used higher doses than recommended by Khilnani G et al. The meta-analysis did show that hydrocortisone treatment reduced the risk of ARDS. However, it cautioned that the incidence of ARDS was not specified in the included studies, and the data regarding ARDS was dominated by one study with questionable bias. Hence, the claim of decreased risk of ARDS deserves guarded reading.⁵ The recent study that they quoted involved 800 patients of sCAP (as they were admitted to ICU) who were randomized to receive hydrocortisone 200 mg/day for 4–7 days followed by tapering over 8–14 days.⁶ The study showed that the hydrocortisone group had lower mortality and a lesser need for intubation and vasopressor support. However, it may be noted that they excluded sCAP with septic shock. Further, the authors conceded that administering hydrocortisone by continuous infusion and tapering dose lacked superior evidence. Thus, the evidence Khilnani GC et al. relied upon to recommend hydrocortisone in sCAP is, at best, weak. Had the authors of the

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How to cite this article: Nath SS, Nachimuthu N, Bhagyashree, Singh S. Unanswered Questions in the Guidelines for Antibiotic Prescription in Critically Ill Patients. *Indian J Crit Care Med* 2024;28(7):715–716.

Source of support: Nil

Conflict of interest: None

guideline of antibiotic prescription mentioned sCAP with shock, it would have been more credible as this guideline would have aligned with the surviving sepsis guideline 2021. After all, sCAP with shock is just a subset of septic shock.³

Thirdly, it was mentioned that 'The evidence for inhaled antibiotics is predominantly from hospital-acquired and ventilator-associated pneumonia, with better odds of clinical cure and microbiologic eradication in adjunct inhaled antibiotic therapy', without citing any trial, thus, raising a question mark on the authenticity of this claim. The authors went ahead and made a useful practice point of using inhaled antibiotics in sCAP on a case-to-case basis! It definitely begs the question of whether the experts can reach a consensus on a clinical recommendation without evidence?

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REFERENCES

1. Khilnani GC, Tiwari P, Mittal S, Kulkarni AP, Chaudhry D, Zirpe KG, et al. Guidelines for Antibiotics Prescription in Critically-ill Patients. *Indian J Crit Care Med* 2024. In press.
2. 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;49(6):615–632. DOI: 10.1007/s00134-023-07033-8.

3. Nath SS, Nachimuthu N, Sharma D. Publisher correction: Guidelines for the management of severe community-acquired pneumonia: One confusing recommendation. *Intensive Care Med* 2023;49:1277. DOI: 10.1007/s00134-023-07201-w.
4. 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.
5. Wan YD, Sun TW, Liu ZQ, Zhang SG, Wang LX, Kan QC. Efficacy and safety of corticosteroids for community-acquired pneumonia: A systematic review and meta-analysis. *Chest* 2016;149(1):209–219. DOI: 10.1378/chest.15-1733.
6. Dequin PF, Meziani F, Quenot JP, Kamel T, Ricard JD, Badie J, et al. CRICS-TriGGERSep network. Hydrocortisone in severe community-acquired pneumonia. *N Engl J Med* 2023;388(21):1931–1941. DOI: 10.1056/NEJMoa2215145.