

Reviewer #1:

**Scientific Quality:** Grade B (Very good)

**Language Quality:** Grade B (Minor language polishing)

**Conclusion:** Accept (General priority)

**Specific Comments to Authors:**

I read this retrospective study with interest. The authors studied the clinical efficacy and safety of colistin sulfate for treating carbapenem-resistant gram-negative bacilli-induced pneumonia. This study is well designed and the performed. The results provided theoretical reference for clinical diagnosis and treatment. Manuscript requires a minor editing. Some minor language polishing should be corrected. Please add a short background in the abstract, and format the references with PMID numbers.

Comments:

Some minor language polishing should be corrected.

**I revised the some spelling mistakes and the article has been language polished.**

Please add a short background in the abstract, and format the references with PMID numbers.

**BACKGROUND: Multidrug-resistant Gram-negative bacteria, exacerbated by excessive use of antimicrobials and immunosuppressants, are a major health threat.**

**The PMID numbers been added to the end of each reference that is included in PubMed.**

**6 Specific comments:**

(1) Please add the author's contribution section. The format of this section will be as follows: Author contributions: Wang CL, Liang L, Fu JF, Zou CC, Hong F and Wu XM designed the research; Wang CL, Zou CC, Hong F and Wu XM performed the research; Xue JZ and Lu JR contributed new reagents/analytic tools; Wang CL, Liang L and Fu JF analyzed the data; Wang CL, Liang L and Fu JF wrote the paper.

**Xu CH and Cui Y conceptualized the research project, wrote the paper and checked for scientific accuracy; Wang XY and Wu HB collected data and checked the manuscript for scientific accuracy; Li W and Wang D collected data, performed statistical analyses and checked the manuscript for scientific accuracy; Lin N collected data, performed statistical analyses and checked the manuscript for scientific accuracy.**

(2) The abstract section needs to modify "Objective" to "Aim" and add "Background".

**I modify "Objective" to "Aim" and add "Background".**

BACKGROUND: Multidrug-resistant Gram-negative bacteria, exacerbated by excessive use of antimicrobials and immunosuppressants, are a major health threat.

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(3) Please provide 4-10 keywords.

colistin sulfate; extensively drug-resistant; pneumonia; intravenous combined with nebulization; sepsis; nephrotoxicity; neurotoxicity

(4) Please add the Core tip section. The number of words should be controlled between 50-100 words.

Multidrug-resistant Gram-negative bacteria, exacerbated by excessive use of antimicrobials and immunosuppressants, are a major health threat. Colistin sulfate provides comprehensive, highly sensitive coverage against these bacteria. For pulmonary infections, its use via intravenous and nebulization methods improves cure rates and reduces adverse reactions, including renal and neurotoxicity. It also significantly ameliorates clinical symptoms in sepsis patients, proving to be safe and reliable.

(5) The "Article Highlights" section is missing. Please add the "Article Highlights" section at the end of the main text (and directly before the References).

## **ARTICLE HIGHLIGHTS**

### ***Research background***

Future research should focus on refining the administration methods and dosage of polymyxin sulfate to further enhance its effectiveness and minimize any potential side effects in treating multidrug-resistant Gram-negative bacterial infections.

### ***Research motivation***

Polymyxin sulfate shows significant efficacy in treating patients with multidrug-resistant Gram-negative bacilli pneumonia, proving to be safe and reliable, with the administration route of low-dose intravenous injection combined with nebulization showing better therapeutic effects and lower adverse reactions.

### ***Research objectives***

In the research group, 92.82% of patients showed improvement with polymyxin sulfate treatment, significantly higher than the 54.9% improvement rate in the control group ( $P < 0.05$ ). Post-treatment, both groups showed significant reduction in levels of white blood cell (WBC), procalcitonin (PCT), and C-reactive protein (CRP) ( $P < 0.05$ ), with the research group demonstrating significantly lower levels than the control group ( $P < 0.05$ ).

### ***Research methods***

We conducted a retrospective analysis of 54 patients suffering from Gram-negative bacilli pneumonia admitted to the intensive care unit, and divided them into experimental and control groups based on the medication used.

### ***Research results***

Our research aims to assess the clinical efficacy and safety of colistin sulfate in treating pneumonia induced by carbapenem-resistant Gram-negative bacilli, aiming to provide a theoretical reference for clinical diagnosis and treatment.

### ***Research conclusions***

The resurgence of the old drug polymyxin in effectively treating infections caused by multidrug-resistant Gram-negative bacteria prompted us to further explore its clinical efficacy and safety.

### ***Research perspectives***

Multidrug-resistant Gram-negative bacteria, exacerbated by the overuse of antimicrobials and immunosuppressants, pose a significant health threat globally.

(6) Please provide the PubMed numbers (<https://pubmed.ncbi.nlm.nih.gov/>) and DOI citation numbers (<https://doi.crossref.org/simpleTextQuery>) to the reference list and list all authors of the references. If a reference has no PMID and DOI, please provide the source website address of this reference.

The PMID numbers been added to the end of each reference that is included in PubMed. DOI number were also added