

# Review of: "Meropenem Usage Assessment amid the Antibiotic Resistance Crisis: A Comprehensive Analysis in a Tertiary Care Hospital in Pakistan"

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Potential competing interests: No potential competing interests to declare.

Dear author,

We have reviewed your manuscript "Meropenem Usage Assessment amid the Antibiotic Resistance Crisis: A Comprehensive Analysis in a Tertiary Care Hospital in Pakistan". The authors assess the meropenem usage amid the AMR crisis in a tertiary care hospital in Pakistan. The manuscript is well-written and concise; however, several concerns were raised. Please address the following comments individually and indicate the specific revisions made in the manuscript.

## Comments:

### Abstract

1. The research objectives listed are not in line with the objectives stated in the main manuscript, at the end of the introduction section. Please state the appropriate research objectives.
2. In the abstract section, the author needs to include research settings (time and place) and the type of analysis, not only mentioning the analysis software.
3. The conclusion does not summarize the findings of this study; please revise it to align with the research objectives and the results obtained.

### Introduction

1. The authors mention, "The haphazard empirical utilization of drugs, exemplified by the indiscriminate use of meropenem." If data is available to support this statement, please provide details on the extent of meropenem misuse in Pakistan or in surrounding countries with similar health conditions.
2. Why is the patient education aspect essential in your study? If you consider it one of the key problems, please provide a detailed explanation in the introduction section.
3. Authors can provide a brief explanation of the guidelines for using meropenem. Is it appropriate to use as an empirical antibiotic, and in which infectious conditions can it be applied?
4. The authors state, "The study specifically focused on key aspects such as indications for prescription, dosage

regimens, considerations related to culture sensitivity, and the level of patient education accompanying the use of meropenem,” but this does not align with the results presented. Please revise accordingly.

## Methods

1. In this section, you mention “this study aimed to assess the prescribing patterns of meropenem ...” How about the patient education?
2. If you are considering a population of patients treated with meropenem antibiotics as empirical therapy, kindly provide a detailed explanation of the inclusion criteria.
3. “Patients were monitored for adverse effects, treatment outcomes, and any modifications to therapy throughout their hospitalization.” Did the author also examine this? It seems that there are no results included on this issue.
4. Please identify the type of analysis performed and its intended purpose, rather than just mentioning the software that was used.

## Results

1. If there is data on inappropriate use of meropenem, it should be included in the results section. Currently, the results presented are insufficient, as merely providing the initial diagnosis is not adequate to assess the appropriateness of meropenem use.
2. “Notably, upon initial indications, 64% were deemed accurate, while 36% were classified as incorrect.” What is the rationale behind this statement?
3. “Cultural investigation demands were observed in 73% of cases, with only 36% of them aligning with meropenem use. This disjunction emphasizes a potential discordance between empirical prescription practices and culture results.” Empirical antibiotics may be administered before culture results are available, but their appropriateness should be determined by the patient's clinical symptoms, medical history, risk factors, and local antibiotic use guidelines. This manuscript should present the appropriateness of antibiotic selection based on indications that align with national guidelines, especially considering the focus on using meropenem as an empirical antibiotic.

## Discussion

1. Please modify the research objectives in the abstract, introduction, methods, and discussion to ensure they correspond with the results shown in the research.
2. “only 63% of empirical prescriptions were deemed accurate. This indicates that meropenem prescription mainly relies on clinical judgment and experience rather than standard guidelines”, What is the rationale behind this statement? If it is based on research findings, please incorporate it into the results section.
3. Please discuss the use of meropenem as it aligns with the guidelines, including supporting data such as types of infections, culture results, and other relevant clinical conditions. Additionally, examine how meropenem is used in tertiary care settings in Pakistan in ways that do not adhere to these standards, explaining why these practices can be considered non-standard.

4. The authors can discuss the rationale behind prescribing meropenem and emphasize the importance of adjusting dosages or therapeutic strategies based on the parameters presented in Figure 2.
5. What is the importance of evaluating the patient's education level? The authors have not addressed these results at all.
6. Please describe the limitations of this study.

## **Conclusion**

1. Provide conclusions that are in line with the study's findings.