



Correspondence



Comments on the Published Meta-Analysis of Clinical and Microbiologic Efficacy and Safety of Imipenem/Cilastatin/Relebactam in Complicated Infections

Ali Zaman Vaziri ¹, Fatemeh Jafarzadeh ², and Amirhossein Mohammadi ³

¹Department of Genetics, Faculty of Advanced Science and Technology, Tehran Medical Science, Islamic Azad University, Tehran, Iran

²Department of Pharmaceutical Science, Islamic Azad University, Tehran, Iran

³Department of Cellular and Molecular Biology, Faculty of Basic Science, University of Maragheh, Maragheh, Iran

OPEN ACCESS

Received: Jul 16, 2012

Accepted: Aug 24, 2021

Correspondent Author:

Amirhossein Mohammadi, MSc

Department of Cellular and Molecular Biology, Faculty of Basic Science, University of Maragheh, Maragheh, Iran.

Tel: +989190642256

E-mail: Amirhossein.Mohammadi.Mail@gmail.com

Copyright © 2021 by The Korean Society of Infectious Diseases, Korean Society for Antimicrobial Therapy, and The Korean Society for AIDS

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ORCID iDs

Ali Zaman Vaziri

<https://orcid.org/0000-0002-7962-390X>

Fatemeh Jafarzadeh

<https://orcid.org/0000-0003-1671-2187>

Amirhossein Mohammadi

<https://orcid.org/0000-0002-0278-0763>

Conflict of Interest

No conflicts of interest.

► See the article “Clinical and Microbiologic Efficacy and Safety of Imipenem/Cilastatin/Relebactam in Complicated Infections: A Meta-analysis” in volume 53 on page 271.

Dear Editor:

I read with great interest a recently published meta-analysis of Sahara et al. [1] entitled “Clinical and microbiologic efficacy and safety of imipenem/cilastatin/relebactam in complicated infections: a meta-analysis.” According to the article, the systematic search was performed by related keywords in international databases; Cochrane Central Registry of Clinical Trials, Embase, and PubMed. After selection based on inclusion and exclusion criteria, four randomized controlled trials articles were included in this meta-analysis. The inclusion criteria of this meta-analysis are trying to reduce bias, such as enrolling patients with an age greater than 18 years. However, the other inclusion criteria were limitations of including articles to randomized control trials comparing imipenem/cilastatin/relebactam against standard of care in patients with complicated intra-abdominal infection (cIAI), urinary tract infection (UTI), and hospital-acquired pneumonia, which varies in infection type also no mention about a variety of bacterial pathogens. Accordingly, four studies in this meta-analysis have different infection types; cIAI, complicated UTI, hospital-acquired bacterial pneumonia, ventilator-associated bacterial pneumonia, and bacterial pathogens. Also, a study with imipenem resistant bacteria-infected patients [2] has different sample populations from other studies and led to bias in the microbiologic efficiency or antimicrobial susceptibility test results comparing between studies.

Another problem with this method is the comparative arm. Among the four studies included in this meta-analysis, two studies were used “placebo + imipenem,” one study was used colistin + imipenem, and one study was used piperacillin + tazobactam as a compactor arm. To compare the efficiency of antibiotics or treatment, the comparator arm of studies must be identical. Reporting overall odds ratio based on different comparators causes to be on bias results of the meta-analysis.

The subgroup analysis should be used for different comparator arm studies. The publication bias was not analyzed; the funnel plot or Egger's regression test, Begg's rank test can be helpful to find out publication bias in meta-analysis.

REFERENCES

1. Sahra S, Jahangir A, Hamadi R, Jahangir A, Glaser A. Clinical and microbiologic efficacy and safety of imipenem/cilastatin/relebactam in complicated infections: a meta-analysis. *Infect Chemother* 2021;53:271-83.
[PUBMED](#) | [CROSSREF](#)
2. Motsch J, Murta de Oliveira C, Stus V, Köksal I, Lyulko O, Boucher HW, Kaye KS, File TM, Brown ML, Khan I, Du J, Joeng HK, Tipping RW, Aggrey A, Young K, Kartsonis NA, Butterson JR, Paschke A. RESTORE-IMI 1: a multicenter, randomized, double-blind trial comparing efficacy and safety of imipenem/relebactam vs colistin plus imipenem in patients with imipenem-nonsusceptible bacterial infections. *Clin Infect Dis* 2020;70:1799-808.
[PUBMED](#) | [CROSSREF](#)