



No need for an initial test dose of meropenem or ertapenem in patients reporting anaphylactic reactions to penicillins

Burke A. Cunha

To cite this article: Burke A. Cunha (2015) No need for an initial test dose of meropenem or ertapenem in patients reporting anaphylactic reactions to penicillins, Journal of Chemotherapy, 27:5, 317-318, DOI: [10.1179/1973947814Y.0000000233](https://doi.org/10.1179/1973947814Y.0000000233)

To link to this article: <https://doi.org/10.1179/1973947814Y.0000000233>



Published online: 07 Jan 2015.



Submit your article to this journal [↗](#)



Article views: 95



View related articles [↗](#)



View Crossmark data [↗](#)

No need for an initial test dose of meropenem or ertapenem in patients reporting anaphylactic reactions to penicillins

Burke A. Cunha^{1,2}

¹Infectious Disease Division, Winthrop-University Hospital, USA, ²State University of New York, School of Medicine, USA

Dear Editor,

I read with interest the article by Doctors Wall, Naylma, and Neumeister on carbapenem safety in patients reporting penicillin allergic reactions which merits comment.¹ Their article confirms our experience on the safety of meropenem and ertapenem in patients reporting history of penicillin allergy. Other reviews have indicated an exceedingly low cross-reactivity between penicillins and carbapenems, but some reviews have recommended an initial test dose before meropenem therapy.² Antibiotic selection in penicillin allergic patients remains problematic.³⁻⁸

Previously, we reported the lack of allergic reactions to meropenem in adults reporting anaphylactic and non-anaphylactic penicillin reactions.⁹ Importantly, in our study, an initial test dose was not given prior to meropenem therapy. Our prospective clinical study was based on years of published and unpublished experience. Hopefully, based on our results, practitioners should be encouraged to use meropenem with confidence in patients reporting a history of anaphylactic and non-anaphylactic reactions to penicillins without an initial test dose based on our results.⁹ Anaphylactic reactions are not dose-related, i.e. an initial test dose before the therapeutic dose has little rationale and, in our experience, is unnecessary.⁹ Although the probability of an anaphylactic reaction is exceedingly low, it is prudent that such patients be observed for potential anaphylactic reactions. In agreement with the findings of Wall *et al.*,¹ since our report, we have continued to treat hundreds of patients with meropenem with a history of anaphylactic and non-anaphylactic reactions to penicillins, even after prolonged therapy for days or weeks, and have never had any allergic reactions.

The potential of cross reactivity with meropenem in patients reporting history of penicillin allergy is exceedingly low, but higher, yet still very low with imipenem.^{3,8} The difference in allergic potential between imipenem/cilastatin and meropenem may be due to the cilastatin component of imipenem/cilastatin.^{3,9}

Based on our meropenem experience, we have given ertapenem safely to patients reporting anaphylactic and non-anaphylactic reactions to penicillins.¹⁰ During and since our ertapenem study, we have never had an allergic reaction to ertapenem on long-term therapy. As with meropenem, we have never used initial test doses of ertapenem before initiating therapy.

Although carbapenems are structurally similar to beta-lactams, from an allergic perspective, it appears that carbapenems seem unrelated to beta-lactams.⁴⁻⁸ Skin testing for meropenem is not readily available or standardized. Meropenem is often used in critical care where there is no time for penicillin skin testing or desensitization.^{1,2} In patients reporting a history of anaphylactic or non-anaphylactic reactions to penicillins, in clinical practice, we continue to use meropenem and ertapenem without penicillin skin testing or initial test doses.^{1,9} In patients reporting history of penicillin allergy, we hope that our experience will give confidence to safely use meropenem or ertapenem therapy. Based on our experience over the years with meropenem and ertapenem in patients reporting allergic reactions to penicillins, we recommend beginning meropenem or ertapenem therapy without an initial test dose.

Disclaimer Statements

Contributors

Sole author.

Funding

None.

Correspondence to: B. A. Cunha, Infectious Disease Division, Winthrop-University Hospital, 222 Station Plaza North (Suite #432), Mineola, NY 11501, USA and Professor of Medicine, State University of New York, School of Medicine, Stony Brook, NY, USA. Email: bacunha@winthrop.org

Conflicts of interest

No conflict of interest.

Ethics approval

Not applicable.

References

- 1 Wall GC, Naylma VA, Neumeister KM. Assessment of hypersensitivity reactions in patients receiving carbapenem antibiotics who report a history of penicillin allergy. *J Chemother.* 2014;26:150–3.
- 2 Kula B, Djordjevic G, Robinson JL. A asystematic review: Can one prescribe carbapenems to patients with IgE-mediated allergy to penicillins or cephalosporins? *Clin Infect Dis.* 2014;59:1113–22.
- 3 Cunha BA. Antibiotic selection in the penicillin-allergic patient. *Med Clin N Am.* 2006;90:1257–64.
- 4 Sodhi M, Axtell SS, Callahan J, Shekar R. Is it safe to use carbapenems in patients with a history of allergy to penicillin? *J Antimicrob Chemother.* 2004;54:1155–7.
- 5 Prescott WA, Jr, DePestel DD, Ellis JJ, Regal RE. Incidence of carbapenem-associated allergic-type reactions among patients with versus patients without a reported penicillin allergy. *Clin Infect Dis.* 2004;38:1102–7.
- 6 Torres J, Blanca M. The complex clinical picture of beta-lactam hypersensitivity: penicillins, cephalosporins, monobactams, carbapenems, and clavams. *Med Clin N Am.* 2010;94:805–20.
- 7 Romano A, Viola M, Gueant-Rodriguez RM, Gaeta F, Valluzzi R, Gueant JL. Brief communication: tolerability of meropenem in patients with IgE-mediated hypersensitivity to penicillins. *Ann Intern Med.* 2007;146:266–9.
- 8 Frumin J, Gallagher JC. Allergic cross-sensitivity between penicillin, carbapenem, and monobactam antibiotics: what are the chances? *Ann Pharmacother.* 2009;43:304–15.
- 9 Cunha BA, Hamid NS, Krol V, Eisenstein I. Safety of meropenem in patients reporting penicillin allergy: lack of allergic cross reactions. *J Chemother.* 2008;20:233–7.
- 10 Cunha BA, Jose A, Hage J. Ertapenem: lack of allergic reactions in hospitalized adults reporting a history of penicillin allergy. *Int J Antimicrob Agents.* 2013;42:584–8.