



1-Minute Pearls/Pitfalls for the Clinician

1-Minute Pearls/Pitfalls for the Clinician

Kwame Dapaah-Afriyie, MD, MBA¹, Michelle Ting, PharmD²

¹ Division of Hospital Medicine, Miriam Hospital, Providence, RI; Warren Alpert Medical School of Brown University, Providence, RI,

² Clinical Pharmacy Specialist, Rhode Island Hospital

Journal of Brown Hospital Medicine

Vol. 1, Issue 2, 2022

Article Information

Keywords: anti-epileptic drugs, DRESS, cutaneous reactions, meropenem, ertapenem, pseudomonas, urinary tract infection, pearls, pitfalls

<https://doi.org/10.56305/001c.34638>

QUESTION 1: CAN YOU DISCHARGE PATIENTS ON ERTAPENEM FOR PSEUDOMONAS URINARY TRACT INFECTIONS?

A 67-year-old healthcare provider who was admitted with a complicated UTI is noted to have a multidrug-resistant Pseudomonas species in his urine culture. He is doing well after receiving intravenous (IV) meropenem for three days. He is afebrile and leukocytosis has resolved. He is eager to get back to work and prefers to be on a once daily IV regimen or PO antibiotics. What is the ideal antibiotic of choice?

A: The group 2 carbapenems (imipenem-cilastatin, meropenem) have been a mainstay of treatment for patients with serious hospital infections caused by multidrug-resistant *Pseudomonas aeruginosa*, Enterobacterales, and other difficult-to-treat Gram-negative pathogens as well as mixed aerobic/anaerobic infections. Ertapenem, the only carbapenem dosed once daily, is a group 1 carbapenem, and does not cover *Pseudomonas* species.^{1,2} He ought to be discharged on the current meropenem regimen unless the urine culture and sensitivity results indicate that the *Pseudomonas* species is sensitive to alternative PO non-beta-lactams such as ciprofloxacin or levofloxacin.

QUESTION 2: IS IT SAFE TO USE AROMATIC ANTI-EPILEPTIC DRUGS IN PATIENTS WITH HISTORY OF DRESS SYNDROME TO CARBAMAZEPINE?

A 45-year-old male with history of seizure disorder for which he is on levetiracetam is admitted for tonic-clonic

seizures. He has a prior history of drug hypersensitivity reaction to carbamazepine. He was treated with benzodiazepines prior to coming to the hospital. Could a different aromatic anti-epileptic drug be used?

A: Aromatic anti-epileptic drugs (AEDs) such as phenytoin, phenobarbital, and carbamazepine are a leading cause of Drug Rash with Eosinophilia and Systemic Symptoms (DRESS) syndrome. Carbamazepine (CBZ) is reported to be the leading AED to cause severe hypersensitivity. Oxcarbazepine (OXC) is structurally similar to CBZ. Lamotrigine is another aromatic anticonvulsant and can also commonly cause severe cutaneous adverse reactions. Assuming that the historical reaction to CBZ was in fact consistent with DRESS, all aromatic AEDs should be avoided since there is up to 80% cross reactivity reported.^{3,4}

Conflicts of Interest

The authors declare they have no conflicts of interest.

Corresponding Author

Kwame Dapaah-Afriyie, MD
Professor of Medicine, Clinical Educator
Warren Alpert Medical School at Brown University
Division Director
Division of Hospital Medicine
The Miriam Hospital, 164 Summit Avenue, Providence, RI 02906



This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CCBY-NC-4.0). View this license's legal deed at <https://creativecommons.org/licenses/by-nc/4.0> and legal code at <https://creativecommons.org/licenses/by-nc/4.0/legalcode> for more information.

REFERENCES

1. Zhanel GG, Wiebe R, Dilay L, et al. Comparative review of the carbapenems. *Drugs*. 2007;67(7):1027-1052. doi:10.2165/00003495-200767070-00006
2. Tamma PD, Aitken SL, Bonomo RA, Mathers AJ, van Duin D, Clancy CJ. Infectious Diseases Society of America Guidance on the Treatment of Extended-Spectrum β -lactamase Producing Enterobacterales (ESBL-E), Carbapenem-Resistant Enterobacterales (CRE), and *Pseudomonas aeruginosa* with Difficult-to-Treat Resistance (DTR-*P. aeruginosa*). *Clin Infect Dis*. 2020;72(7):e169-e183. doi:10.1093/cid/ciaa1478
3. Hirsch LJ, Arif H, Nahm EA, Buchsbaum R, Resor SR, Bazil CW. Cross-sensitivity of skin rashes with antiepileptic drug use. *Neurology*. 2008;71(19):1527-1534. doi:10.1212/01.wnl.0000334295.50403.4c
4. Darlenski R, Kazandjieva J, Tsankov N. Systemic drug reactions with skin involvement: Stevens-Johnson syndrome, toxic epidermal necrolysis, and DRESS. *Clin Dermatol*. 2015;33(5):538-541. doi:10.1016/j.clindermatol.2015.05.005