

Management of Beta-Lactam Allergies: Major Update and Practice Change

Provincial Drugs & Therapeutics Antimicrobial Stewardship Subcommittee

www.healthpei.ca/src/microbiology

November 14, 2017

This information applies to: *Island Physicians, Nurse Practitioners, Dentists, Nurse Educators, Nurse Managers, Nurse Clinical Leads, and Pharmacists*

The Health PEI Provincial Drugs & Therapeutics Antimicrobial Stewardship Subcommittee (PD&T ASSC) is pleased to introduce the following documents to assist PEI healthcare professionals in managing patients with reported beta-lactam allergies:

- Management of Penicillin and Beta-Lactam Allergy Guidelines which includes:
 - Penicillin Allergy Management Algorithm
 - Beta-Lactam Cross Allergy Matrix (based on similar core and/or side chain structures)

A multidisciplinary working group of the PD&T ASSC developed these documents which are largely based on work done by the New Brunswick Provincial Health Authorities Anti-Infective Stewardship Committee in 2016. These documents can be found on the following website: www.healthpei.ca/src/microbiology. For CIS users: a reminder that there is a quick link (Micro guidelines) to the website on one of the toolbars at the top of the PowerChart screen.

This will change your practice

- There is no significant cross reactivity between penicillins (e.g. amoxicillin) and cefuroxime, cefazolin, or ceftriaxone so these antibiotics can be used safely in the setting of potential IgE-mediated reactions to penicillins.
- Penicillin allergies will be better assessed and potentially downgraded based on a 5-part algorithm. Delisting penicillin allergies have probable long term beneficial effects on morbidity and mortality.
- Clindamycin and fluoroquinolones will be used less often based on these guidelines reducing Cdiff and antibiotic resistance.
- Dentists can strongly consider cefuroxime (with or without metronidazole) rather than clindamycin in patients unable to have penicillin/amoxicillin (with or without metronidazole) due to a true penicillin/amoxicillin allergy.

Dr. German will be presenting Grand Rounds at PCH (Nov. 16th) & QEH (Nov. 17th).

Please contact Dr. German's Office at 894-2439 if you would like to request an educational session.

Rationale behind developing these documents:

- Beta-lactams are the most commonly prescribed class of antibiotics.
- Beta-lactams are generally safe; allergic and adverse drug reactions are over-diagnosed and over-reported.
- Penicillin is the most frequently reported drug allergy (reported in 5-10% of the population). Studies have shown that between 80 – 95% of reported penicillin allergies are not true hypersensitivity reactions and the vast majority of the patients reporting an allergy to penicillins can tolerate beta-lactams.
- A patient with a reported beta-lactam allergy is more likely to receive antibiotics from other classes which may be less effective, more toxic, broader spectrum, more expensive, and more likely to lead to resistant organisms than beta-lactams.
- Practice around managing beta-lactam allergies is changing because allergies have been better defined and the association between the chemical structure and the likelihood of cross-reactivity is now better understood.

- Cross-reactivity between penicillin and cephalosporins is due to similarities in the side chains and not similarities in the beta-lactam ring structure as previously suspected.
- Currently there is no standard approach to managing beta-lactam allergies in PEI.

Future work includes:

- 1) Looking at possible options for customizing allergy alerts in the Clinical Information System (CIS).
- 2) Identifying and, if necessary, modifying any PowerPlans in CIS that provide recommendations on antibiotic selection in patients with a beta-lactam allergy or sensitivity.
- 3) Modifying our provincial empiric guidelines to reflect the information in the new beta-lactam allergy management documents
- 4) Developing an allergy assessment form.

Peers involved: **PD&T ASSC Beta-Lactam Allergy Management Working Group:** Dr. John Morash, Dr. Katherine Bell, Dr. Greg German, Linsey MacEwen, Amanda Burke, Jennifer Boswell, Isaac Bai (Summer Pharmacy Student).

PD&T ASSC: Dr. Adnan Bajelan, Jennifer Boswell, Amanda Burke, Jana Corish, Dr. Greg German, Dr. Laura Hogan, Dr. Michael Irvine, Kim MacPhee, Beverly Martin.

New Brunswick acknowledgements:

- Main authors: Tim MacLaggan, Dan Landry, Holly Glennie, Mario Levesque, Jon Stevens
- Members of the NB Health Authorities Anti-Infective Stewardship Committee (NB-ASC)
- Members of the NB Health Authorities Anti-Infective Stewardship Committee Working Group

cc: Health PEI Senior Management Group

FOR MORE INFORMATION, PLEASE CONTACT THE CO-CHAIRS OF PD&T ASSC:

Dr. Greg German
Medical Microbiologist and Infectious Disease Consultant
Provincial Laboratory Services
Queen Elizabeth Hospital
(902) 894-2515
GJGerman@ihis.org

Jennifer Boswell
Antimicrobial Stewardship Pharmacist
Provincial Pharmacy Services
Queen Elizabeth Hospital
(902) 894-25487
JLBoswell@ihis.org