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Additions

1. Iron isomaltoside injection (Monoferric®)

- New IV iron preparation restricted to: Hematology and GI Services for:
 - ⇒ Intolerance or poor response to oral iron supplementation ***AND***
 - ⇒ Gastrointestinal malabsorption ***AND***
 - ⇒ Hemoglobin less than 110 g/L ***AND***
 - ONE of:** ferritin less than 30 mcg/L ***OR*** ferritin less than 200 mcg/L with iron saturation less than 20% ***AND***
 - ⇒ Total dose exceeds 300 mg IV iron
- Nephrology for:
 - ⇒ CKD clinic or independent dialysis (PD, home hemodialysis) ***AND***
 - ⇒ Total dose exceeds 300 mg IV iron

2. Ezetimibe 10 mg tablet (Ezetrol®)

- Cholesterol lowering agent
- May be used in addition to a statin if unable to reach target LDL, or in place of a statin in patients who are intolerant to statin therapy

3. Rivaroxaban 2.5 mg tablets (Xarelto®)

- Additional criteria for use: Rivaroxaban 2.5 mg PO BID (+ ASA 81 mg daily) has been approved for prevention of stroke, MI, CV death or acute limb ischemia and mortality in patients taking ASA (75 to 100 mg) with concomitant coronary artery disease ***AND*** peripheral artery disease.

4. Tacrolimus Prolonged-Release tablets (Envarsus PA®)

- Long-acting anti-rejection drug restricted to:
 - ⇒ Liver and Kidney transplant patients
 - ⇒ Indications outlined by BC Renal Agency Glomerulonephritis Formulary

5. Rituximab injection (Riximyo®)

- Monoclonal antibody; biosimilar to Rituximab (Rituxan®) restricted to:
 - ⇒ Indications outlined in BC Cancer Benefit Drug List ***AND*** patients registered with BC Cancer
 - ⇒ Indications outlined in BC Renal ***AND*** patients registered with BC Renal Agency
 - ⇒ Adjunct therapy in solid organ transplant (SOT) for antibody-mediated rejection

Deletions

1. Iron dextran injection (DexIron®, Infufer®)

- Removal from Canadian market
- Alternatives: Iron sucrose (Venofer®); Iron isomaltoside (Monoferric®)

Updated Policies

1. CLARITHROMYCIN INTERCHANGE DELETION

Clarithromycin regular release tablets will no longer be interchanged to the long-acting XL tablets.

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Any comments, questions, or concerns with the content of the newsletter should be directed to the editors. Write to VA Pharmaceutical Sciences Vancouver General Hospital, 855 W12th Ave, Vancouver BC V5Z 1M9, send a FAX to 604-875-5267 or email karen.shalansky@vch.ca

2. FRUITLAX IN BOWEL PROTOCOLS REQUIRES CHECK BOX FOR ORDERING

Due to issues of palatability, tolerability and potassium content, FRUITLAX laxative which is found in the MEDICINE, GERIATRIC, and PALLIATIVE CARE bowel protocols have been switched from an automatic order to a check box that can be ticked (in order to be activated).

Since the above bowel protocols are often referred to in PPOs, rather than itemized, we have added the following under all references to each of these bowel protocols in PPOs:

- FRUITLAX 30 mL PO BID only if on oral diet ***AND*** eGFR 30 mL/min or greater; hold if diarrhea

When one of these bowel protocols is ordered without using a PPO, FRUITLAX will need to be hand written separately.

3. BETA-LACTAM CROSS-SENSITIVITY UPDATE

Tim Lau, Pharm.D., Jennifer Grant, MDCM

Penicillins, cephalosporins, and carbapenems belong to a class of antibiotics known as beta-lactams (Table 1). Approximately 10% of patients are labelled as penicillin allergic (< 1% are actually truly allergic), resulting in use of non beta-lactam antibiotics. Cross-reactivity between penicillins, cephalosporins and carbapenems is due to similarities in the side-chain, not the beta-lactam ring structure itself (i.e. patients allergic to a penicillin antibiotic will only react to cephalosporins and carbapenems that have the same side-chain structure to that specific penicillin antibiotic)

Class	Drugs
Penicillin	amoxicillin, ampicillin, cloxacillin, penicillin, piperacillin-tazobactam
Cephalosporin	cefazolin, cefixime, cefotaxime, cefoxitin, ceftazidime, ceftriaxone, cefuroxime, cephalexin
Carbapenem	ertapenem, imipenem-cilastatin, meropenem

Cefazolin Pilot Project For Surgical Prophylaxis

Cefazolin has a unique side-chain that does not cross-react with any beta-lactam antibiotics. A pilot project was introduced at VA in Oct 2018, whereby cefazolin was administered to penicillin allergic patients, including those with reported anaphylaxis. Patients with history of delayed severe skin allergic reactions were excluded, as the exact mechanism

for these reactions are unknown (e.g. Stevens-Johnson syndrome (SJS), toxic epidermal necrolysis (TEN), drug reaction with eosinophilia and systemic symptoms (DRESS), acute generalized exanthematous pustulosis (AGEP)). Post-implementation, cefazolin use increased by 18.2% with no documented anaphylaxis in penicillin-allergic patients receiving cefazolin. Three patients developed reactions to cefazolin, however, none had histories of penicillin allergy.

Antibiotic Allergy Cross-Sensitivity Chart Revision

Based on these safety findings, the Antibiotic Allergy Cross-sensitivity Chart has been expanded to include all formulary oral and parenteral beta-lactams, taking into account the similarities between side-chains. (see page 3). This initiative is in alignment with the BC Provincial Antimicrobial Clinical Expert (PACE) Group. Please contact Pharmacy to obtain a wall copy of this chart.

Pharmacy Awards

Alison Yong, Pharm.D. and Joan Ng, Pharm.D. received the Canadian Society of Hospital Pharmacists (CSHP), BC Branch *Pharmacy Practice Residency Award* for their research paper entitled "Knowledge, attitudes and practices of pharmacists in caring for patients with substance use disorders (KASPER)."

Jenny Hong, Pharm.D., Robert Wright, Pharm.D., Nilu Partovi, Pharm.D., FCSHP and Trana Hussaini, Pharm.D. received the CSHP, BC Branch *Publication - Review Article Award* for their paper entitled "Review of clinically relevant drug interactions with next generation hepatitis C direct acting antiviral agents".

Karen Shalansky, Pharm.D., FCSHP was honoured with receiving the Wilma Crockett Award. The Wilma Crockett Memorial Award is an opportunity for the BC renal and kidney transplant community to recognize individuals who have made an outstanding contribution to patient care in this province.

Shazia Damji, Pharm.D. received the *Resident of the Year Award* by Lower Mainland Pharmacy Services (LMPS).

Ming Chang, B.Sc. (Pharm) received the *Resident Impact Award* by LMPS.

Puneet Vashist, Pharm.D. received the *New Preceptor of the Year Award* by LMPS.

Cesilia Nishi, Pharm.D. received the *Veteran Preceptor of the Year Award* by LMPS.

VCH-PHC PHARMACY DEPARTMENT
 ANTIBIOTIC ALLERGY CROSS-SENSITIVITY CHART

	Amikacin	Amoxicillin	Ampicillin	Azithromycin	Cefadroxil (NF)	Cefazolin	Cefepime	Cefixime	Cefotaxime	Cefoxitin	Cefprozil (NF)	Ceftazidime	Ceftriaxone	Cefuroxime	Cephalexin	Chloramphenicol	Ciprofloxacin	Clarithromycin	Clindamycin	Cloxacillin	Cotrimoxazole (Sulfa)	Daptomycin	Ertapenem	Erythromycin	Gentamicin	Imipenem	Levofloxacin	Meropenem	Metronidazole	Moxifloxacin	Penicillin	Piperacillin/Tazobactam	Streptomycin	Tigecycline	Tobramycin	Vancomycin		
Amikacin																																						
Amoxicillin																																						
Ampicillin		X																																				
Azithromycin																																						
Cefadroxil (NF)		X	X																																			
Cefazolin																																						
Cefepime																																						
Cefixime																																						
Cefotaxime																																						
Cefoxitin																																						
Cefprozil (NF)		X	X		X																																	
Ceftazidime																																						
Ceftriaxone																																						
Cefuroxime																																						
Cephalexin		X	X		X																																	
Chloramphenicol																																						
Ciprofloxacin																																						
Clarithromycin																																						
Clindamycin																																						
Cloxacillin		X	X																																			
Cotrimoxazole (Sulfa)																																						
Daptomycin																																						
Ertapenem																																						
Erythromycin																																						
Gentamicin		X																																				
Imipenem																																						
Levofloxacin																																						
Meropenem																																						
Metronidazole																																						
Moxifloxacin																																						
Penicillin		X	X																																			
Piperacillin/Tazobactam		X	X		*						*																											
Streptomycin		X																																				
Tigecycline																																						
Tobramycin		X																																				
Vancomycin																																						

KEY TO SYMBOLS:
 Blank = Not cross-sensitive as different structure
 X = **AVOID.** Potential for cross-sensitivity due to similar structure or based on clinical reports of cross-sensitivity
 * = **USE WITH CAUTION.** Similar side chain - Potential for cross reaction. Monitor first dose closely (vital signs at 15, 30, and 60 minutes post-first dose)
 NF = Non-formulary drug
Note: **AVOID all penicillins, cephalosporins and carbapenems** if patient reports history of **severe delayed skin allergy** to **ANY beta-lactam antibiotic** (i.e. Steven-Johnson syndrome (SJS), toxic epidermal necrolysis (TEN), drug rash with eosinophilia and systemic symptoms (DRESS), acute generalized exanthematous pustulosis (AGEP)).

Ref: Adapted with permission from Beta-lactam Antibiotic Cross-Allergy Chart, Interior Health Authority
 Updated: April 2021 PHARMACY/ASPIRES