Health PEI

ANTIMICROBIAL STEWARDSHIP SUBCOMMITTEE

IV Amoxicillin/Clavulanate is Now Available in Hospital

Background Information

- Amoxicillin/clavulanate is **a broad-spectrum antibiotic** containing an aminopenicillin (amoxicillin) and beta-lactamase inhibitor (clavulanate) covering an array of Gram-positive, Gram-negative, and anaerobic bacteria
- It is **high-risk for *C. difficile* infection** and should only be used when broad-spectrum coverage is required
- IV amoxicillin/clavulanate has been studied and **is indicated for the treatment of community acquired polymicrobial infections** in individuals unable to take oral amoxicillin/clavulanate, including:[4-14]
  - Skin and soft tissue infections suspected to be polymicrobial or have Gram-negative involvement (e.g. polymicrobial diabetic foot infections greater than 4 weeks duration, groin/rectal involvement or bite wound infections)
  - Severe odontogenic infections
  - Intra-abdominal infections (e.g. peritonitis, abscess, diverticulitis, appendicitis, cholangitis)
  - Polymicrobial respiratory tract infections (e.g. aspiration pneumonia in individuals with risk factors for anaerobic involvement)

Amoxicillin/clavulanate should be **used preferentially over piperacillin/tazobactam in community acquired polymicrobial infections** where *Pseudomonas* spp are not suspected

- Patients can **easily be transitioned to oral amoxicillin/clavulanate** if they are clinically improving, have a functional gastrointestinal tract and can take oral medications, thereby facilitating hospital discharge
- An amoxicillin/clavulanate monograph can be found in Health PEI's Intravenous Drug Therapy Manual

IV Amoxicillin/Clavulanate Dosing

- Daily dose is determined based on the indication, severity, site of the infection, susceptibility of the pathogen(s) and renal function. Doses are expressed in terms of amoxicillin/clavulanate content.
- Health PEI will supply
  - 5:1 ratio product (amoxicillin/clavulanate 500 mg/100 mg) and
  - 10:1 ratio product (amoxicillin/clavulanate 2,000 mg/200 mg)

- Pediatrics: Use 2,000 mg/200 mg (10:1 ratio) product to prepare all ordered doses
- Standard Adult Dose: 2,000 mg/200 mg (10:1 ratio) product q 8-12 hours
- Renal Dosing: Infuse 2 vials of 500mg/100 mg (5:1) product (1,000 mg/200 mg) as a loading dose followed by 500 mg/100 mg q 12 -24 hours

Stability

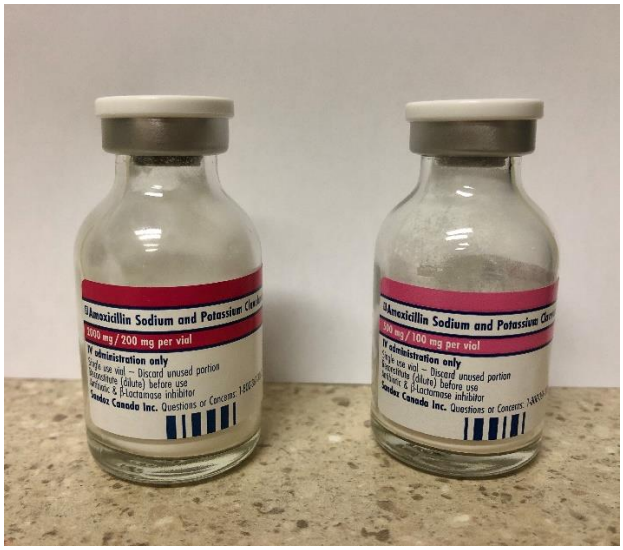
- IV formulation of amoxicillin/clavulanate has **very short stability**
- **Reconstituted vials** are stable for **15 minutes at room temperature**
- When diluted in NS, solution is stable for **1 hour at room temperature**. Stability can be increased up to 4 hours if drug is added to pre-refrigerated bag and stored in refrigerator.
- Not suitable for outpatient parenteral therapy in most cases

Administration

- Infusion should be prepared immediately prior to administration due to short stability
- In Adults, doses of 1 gram or less may be given IV Push over 3 to 4 minutes. Doses greater than 1 g must be administered over 30 minutes via intermittent infusion

Look-alike vials

- The two vial strengths have a very similar appearance but are **not equivalent**. Please provide extra care when checking vial prior to administration



Amoxicillin/Clavulanate Spectrum of Activity

- Gram-positive organisms such as: methicillin-susceptible *S. aureus* (MSSA), most *Streptococci* spp, *Enterococcus faecalis* and *Listeria* spp.
- Gram-negative organisms such as *E.coli*, *Klebsiella* spp, *Haemophilus* spp, *Proteus* spp, *Pasteurella multocida* and *Moraxella catarrhalis*
- Anaerobic organisms (Gram-positive and Gram-negative including *Bacteroides* spp.)

Amoxicillin/Clavulanate Does NOT Provide Coverage for the Following:

- *Pseudomonas aeruginosa*
  - Do **NOT** use amoxicillin/clavulanate if clinical history or cultures indicate that *Pseudomonas aeruginosa* may be a causative organism
  - IV amoxicillin/clavulanate has **NO** activity against *Pseudomonas aeruginosa* and therefore exerts less selective pressure on this multi-drug resistant organism
- Ampicillin-resistant *E. faecalis*
- Methicillin-resistant *S. aureus* (MRSA)
- *Enterobacterales* spp with ESBL, AmpC or carbapenemase
- Atypical organisms (*Chlamydophila, Legionella* or *Mycoplasma*)
- *Stenotrophomonas maltophilia*

These guidelines are an adaptation of Alberta Health Services Antimicrobial Stewardship Backgrounder **Amoxicillin-clavulanate is now available IV February 2021** and New Brunswick Horizon Health Network **Did You Know: IV amoxicillin/clavulanate is now available for use in hospital? September 2022**

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