CALIFORNIA PRISON HEALTH CARE SERVICES

VOLUME 5: NURSING SERVICES	Effective Date: 8/1/10
CHAPTER 16D	Revision Date(s):
PARENTERAL ADMINISTRATION OF VANCOMYCIN	Attachments: Yes☐ No☒

I. POLICY

1. Vancomycin shall be administered only upon the order of a provider.
2. Vancomycin shall only be administered by a registered nurse (RN).
3. Vancomycin shall be administered via an infusion pump.
4. The patient-inmate shall be adequately monitored during Vancomycin administration.
5. Pharmacy should be consulted for any questions regarding appropriate monitoring parameters, possible adverse events, as well as any other problems regarding administration of Vancomycin.

II. PURPOSE

To provide a procedure for the safe administration of Vancomycin to adult patient-inmates.

III. RESPONSIBILITIES

The Chief Executive Officer/Health Care Manager (CEO/HCM) at each institution is responsible for implementation of this policy in collaboration with the Chief Nurse Executive/Director of Nursing (CNE/DON).

IV. PROCEDURE DETAILS

A. Equipment

Volumetric intravenous (IV) Pump
Piggyback IV pump set
Prescribed dose of IV Vancomycin as mixed or provided by Pharmacy

B. Knowledge Base

1. Observe the patient-inmate very closely when giving IV Vancomycin, particularly the first doses; "red neck" syndrome can occur (see *adverse effects*); slow administration decreases the risk of adverse effects.
2. Vancomycin is indicated for the treatment of:
   a. Potentially life-threatening infections not treatable with other less toxic antibiotics (parenteral)
   b. Severe staphylococci infections in patient-inmates who cannot receive or have failed to respond to penicillins and cephalosporins
   c. Prevention of bacterial endocarditis in penicillin-allergic patient-inmates undergoing dental, upper respiratory, Gastrointestinal (GI), or genitourinary (GU) surgery or invasive procedures
   d. Staphylococcal enterocolitis and antibiotic-associated pseudomembranous colitis caused by *Clostridium difficile* (oral)
3. Adverse effects:
   a. Other: Superinfections; "red neck or red man syndrome" (sudden and profound fall in Blood Pressure (BP), fever, chills, paresthesias, erythema of the neck and back)

b. Central Nervous System: *Ototoxicity*
c. Gastrointestinal: *Nausea*
d. Cardiovascular: Hypotension (IV administration)
e. Hematologic: Eosinophilia
f. Genitourinary: *Nephrotoxicity*
g. Dermatologic: *Urticaria*, macular rashes

4. Culture and sensitivity shall be obtained prior to initiation of therapy or known Methicillin-resistant Staphylococcus aureus.

C. Special Notes

1. Contraindications: allergy to Vancomycin.
2. Use cautiously with hearing loss, renal dysfunction, pregnancy, lactation.
3. Do not administer with atracurium, metocurine, pancuronium, rucuronium, tubocurarine, vecuronium. May result in increased neuromuscular blockade.
4. Vancomycin accumulation: Data has shown that prolonged treatment with Vancomycin (>10 days) may result in a decline in the drug's elimination. Given this risk of decreased elimination close monitoring of serum levels is needed, even in patient-inmates with normal and stable renal function.

D. Procedure

1. Assess for allergy to Vancomycin, hearing loss, renal dysfunction, pregnancy, lactation prior to initiation of Vancomycin. Notify the provider if any of these conditions exist.
2. Culture site of infection before initiation of therapy.
3. Monitor renal function tests with prolonged therapy.
4. Evaluate for safe serum levels; concentrations of 60---80 µg/mL are toxic.
5. Explain the procedure to the patient-inmate and potential side effects. The following side effects may occur: nausea (small, frequent meals may help); changes in hearing; superinfections in the mouth, vagina (frequent hygiene measures will help). Teach the patient-inmate to report ringing in the ears, loss of hearing, difficulty voiding, rash, flushing.
6. Prime IV tubing with Vancomycin and place on the volumetric pump. Set volumetric pump to correct rate as ordered by the provider. (Typically, Vancomycin is administered at a rate of 1 G over two (2) hours.)
7. Throughout therapy, monitor the following when ordered and notify the provider of abnormal values:
   a. Vancomycin Trough Levels – obtain at steady state (every three (3) days) or more often when ordered by the provider.
   b. Blood Urea Nitrogen and Serum Creatinine – measure every two (2) days or every day in unstable renal function.
   c. Weight - weigh patient-inmate daily
   d. Urine Output – measure and monitor urine output daily.
   e. Check for signs of phlebitis daily.
   f. Trough Levels – If trough level is over 15 µg/mL, notify the provider. Trough level is to be drawn 10 minutes prior to next infusion.

Reference Interval:
Optimal: 5.0-10.0 µg/mL
Toxic: 20.1 µg/mL or greater

g. Peak Levels are no longer routinely recommended.

E. Documentation

1. Document the following on the Medication Administration Record (MAR):
   a. Name of medication
   b. Dosage
   c. Date/time
   d. Method of administration
   e. Name and quantity of solution
2. Record the quantity of solution given via IV piggyback on the intake and output (I&O) record.
3. Document the patient-inmate's tolerance of treatment, complaints of side effects, and any other pertinent data on the Nursing Care Record.
4. Document the patient-inmate education provided on the Nursing Care Record.

F. References

Weinstein, S. (2001). Plumer's principles and practice of intravenous therapy (7th ed.). Philadelphia, PA: Lippincott, Williams & Wilkins, Retrieved from CD-ROM @ E:\mg\vancomycin_hydrochloride.htm