PERICARDIOCENTESIS AND PERICARDIAL DRAIN/ CATHETER - ICU

PURPOSE: To outline the management of the patient undergoing a pericardiocentesis with or without a pericardial drain catheter.

SUPPORTIVE DATA: Pericardiocentesis is a percutaneous puncture of the pericardial cavity for withdrawal of fluid and subsequent continuous pericardial drainage with a catheter, (pigtail). It is used to treat pericardial effusions and cardiac tamponade. Possible complications include ventricular puncture, infarct, arrhythmias/tamponade and infection.

PRE-INSERTION ASSESSMENT:

1. Assess the following pre-insertion:
   - Vital signs (VS) (including pain), cardiac rhythm and heart sounds
   - Hemodynamic values
     Note: Equalization of right atrial (RA) pressure, pulmonary artery diastolic (PAd), and pulmonary artery wedge pressure (PAWP)
   - Narrowing pulse pressure and pulsus paradoxus greater than 10 mmHg
   - Hematocrit (HCT), Hemoblobin (Hgb) prothrombin time (PT), Platelets per Provider order

ASSESSMENT:

2. Assess immediately post procedure and a minimum of every 2 hours:
   - Vital signs, cardiac rhythm, hemodynamic values
   - Pericardial aspirate: amount, color, clarity
   - Insertion site and drainage for: bleeding, color, and amount of drainage including presence of blood clots
   - Signs of infection (e.g. fever, chills, purulent drainage)
   - Signs of cardiac tamponade:
     - Decreased systolic BP
     - Narrowing pulse pressure and pulsus paradoxus greater than 10 mmHg
     - Decreased/muffled heart sounds, friction rub
     - Tachypnea, tachycardia
     - Equalization of RA, PAd, and PAWP
3. Request a chest x-ray immediately post-insertion as ordered.
4. Assess HCT, Hgb and PT values as drawn.

CATHETER MAINTENANCE:

5. Maintain closed system at all times.
6. Maintain catheter flush/drain as ordered:
   - Bulb drainage (e.g. JP) as ordered or
   - Sorenson continuous flush of 3 mL/hr (1000 units heparin in 500 mL normal saline) if ordered. Use 3-way stopcocks.
7. Flush pericardial catheter with normal saline or as ordered.
   - Remove cap and scrub port with Chloraprep for 30 seconds prior to flushing
8. Elevate head of bed 30-45 degrees
   - Maintain drainage system below chest level at all times.
9. Empty drainage bag and record drainage amount every 8 hours or more often as ordered.
10. Change drainage bag every 72 hours.

DRESSING:

11. Change transparent dressing a minimum of every 72 hours.
12. Change gauze dressing every 24 hours.
13. Clean skin with Chloraprep during dressing change.

EMERGENCY MEASURES:

14. Perform the following interventions:
    - Disconnections: Clean tubing with Chloraprep and reconnect to new bag.

- Dislodgement:
  - Immediately apply sterile gauze to site using firm pressure
  - Observe for signs of cardiac tamponade (tachycardia, hypotension, JVD distention)
  - Notify Provider

REPORTABLE CONDITIONS:

15. Notify Provider for:
- Significant changes in vital signs and hemodynamic values
- Signs of tamponade
- Bleeding at insertion site
- Clogged catheter (no drainage, resistance to flushing)
- Significant change in amount and quality of drainage
- Catheter dislodgement
- Signs of infection

PATIENT/ CAREGIVER EDUCATION

16. Instruct on the following:
- Purpose of procedure
- Precautions to prevent catheter dislodgement/disconnection
- Need to report any sudden increase in respiratory difficulty

COLLABO-RATION:

17. Collaborate daily with Provider regarding anticipated discontinuation of drainage tube.

ADDITIONAL STANDARDS:

18. Implement the following as indicated:
- Oxygen Therapy
- Pain Management
- Pulmonary Artery Catheter - ICU
- Restraints
- Intravenous Therapy

DOCUMENTATION:

19. Document in accordance with documentation standards.
iView- Systems Assessment – Drain/Tubes (Dynamic Group)

Initial date approved:	Reviewed and approved by:	Revision Date:
11/94	Professional Practice Committee Nurse Executive Council Attending Staff Association Executive Committee	10/00, 03/05, 12/13, 08/17,12/20

REFERENCES:

Kern, M. E. (2011). Pericardial catheter management. In Lynn-McHale Wiegand (Ed.), *AACN Procedure Manual for Critical Care*, 6th Ed. St Louis Missouri.