Continuous Subcutaneous Infusion (CSCI) for Palliative Patients Using the CADD Solis Pump - Clinical Practice Guideline in Acute Palliative Care Settings - Adult Only

Site Applicability

Richmond Health Services (RHS), Supportive Palliative Care Unit (SPCU) to be used in palliative settings only

Practice Level

1. RN Advanced skill
2. Advanced skills: Must complete Continuous Ambulatory Delivery Device (CADD) pump training
    a. The RN will review the skill with the Palliative Clinician or Clinical Educator and demonstrate competency prior to performing the skill independently
    b. Must complete yearly competencies with unit Clinical Resource Nurse
    c. The RN who has the required competency is responsible for all duties related to management of the infusion pump
3. A Licensed Practical Nurse (LPN) **is not permitted** to acquire this competency, but is able to provide limited care to a patient receiving continuous subcutaneous infusion (CSCI) with an RN present on site
    a. The LPN is not permitted to program the pump, change cassette/mini-bag
    b. The LPN is responsible for assessing the SC site and identifying the status of the patient who is receiving CSCI

Policy Statement

General:

1. A Physician's Order is required to initiate CSCI. This includes the rate of infusion and breakthrough dosing
2. Physician to complete CSCI pre-printed orders

Safety:

1. The CADD pump will be initially programmed by **two qualified RNs**
2. **Two qualified RNs** will check the pump when any reprogramming is required
3. Two RNs must sign the flow sheet following pump reprogramming

Risk Assessment:

1. Determine appropriateness of the use of CADD pump in PCA mode by the patient
2. Flag physician's CSCI order with a yellow sticker
3. If dosage adjustment has been made, ensure to transfer the original yellow sticker from the original order into the dosage adjustment order
4. Resuscitation equipment must be readily available and accessible when administering continuous subcutaneous infusion
5. Naloxone, an opioid antagonist, must be readily available on the unit
6. Flumazenil, a benzodiazepine antagonist must be readily available on the unit
7. Dedicated subcutaneous site for medication (e.g. midazolam or hydromorphone) infusion only
8. All CSCI documentation must be written on "Medication Record – For Continuous Subcutaneous Infusion VIA CADD/PCA PUMP" (Appendix A)

9. The sedation log documentation form must be used as per clinical practice guideline for continuous subcutaneous Midazolam/ Fentanyl/ Hydromorphone
10. Biomed must check CADD pump yearly
11. DO NOT discharge patient home with CADD Solis pump, discharge only with CADD Prizm pump supplied by Calea

Decision Making Process:

The decision to implement CSCI must be based on consultation and collaboration with all care providers who will be involved, each of whom has a role to play in reaching a decision

Physician's Role:

1. Assesses the patient's condition and determines if the use of CSCI is the best therapeutic option for effective symptom management
2. Consults with Nursing Unit Team and/or Clinical Resource Nurse (CRN) regarding capacity to manage and monitor CSCI
3. Consults with the pharmacist about the specific medication(s) to be included in the infusion

Nursing Unit Team Role:

1. Charge nurse identifies that staff mix (RN/LPN) can accommodate a patient receiving CSCI, and whether the staff have the knowledge and skill to manage CSCI
2. Each unit should keep a record of nurses with the required competency in management of CSCI and the CADD Pump
3. Implementation may have to be delayed until sufficient numbers of RNs have the required competency
4. Ensure Discharge Planning begins as soon as decision is made to initiate CSCI, when patient goal is to transfer to another care setting/home
5. Assessment and initial teaching of family/ caregiver will be done by an RN with the required competency prior to discharge home

Patient/Family Role:

1. Seeks further information as desired about the reasons for using CSCI; capable patients have the right to refuse
2. Family/ caregiver understands what will be expected of him or her, and agrees to participate in care (should patient be discharged home with CSCI)
3. The patient agrees to have the caregiver (family member or friend) participate in the monitoring and management of the CSCI at home

Need to Know

Goals of Treatment:

- **Pain Control**: the "Patient Controlled Analgesia" (PCA) function of the CADD pump allows the patient to receive a continuous rate of medication, and obtain a breakthrough dose when needed. The patient can self administer a bolus dose as needed for symptom management which in effect, gives the patient a sense of control

Indications:

1. Pain levels are not well maintained, pain levels are rapidly changing
2. Oral route is no longer feasible
3. Refractory delirium
4. Swallowing difficulties with unmanaged symptom/s
5. Intractable nausea and vomiting
6. When high doses of analgesics are required and the oral dose would be unmanageable and when standard oral opiate therapy may be limited
7. Medication protocol necessitates CSCI

Contraindications (not absolute):

1. Insufficient subcutaneous tissue (e.g. extreme cachexia)
2. Coagulation disorders
3. Gross edema
4. Unusual skin disorders
5. 90 degree burns
6. General diaphoresis

The Advantages of Using CSCI Include:

1. Steady state of analgesia
2. Fewer GI side effects
3. Ease with portability

The Disadvantages Include:

1. Local irritation at the infusion site
2. Poor absorption at higher infused volumes
3. Relative high cost of purchasing or renting CADD pumps
4. Cost and length of time to prepare the mini bag by pharmacy

Definitions

CADD Pump:

- A Continuous Ambulatory Drug Delivery (CADD) pump provides one or more medications subcutaneously at a continuous rate of infusion in addition to patient controlled demand doses

Continuous Subcutaneous Infusion (CSCI):

- A route of medication administration characterized by the continuous controlled delivery of medication(s)

Patient Controlled Analgesia (PCA):

- The patient/RN is able to titrate the opioid dose to his or her individual needs by controlling the pump that delivers bolus doses of analgesic according to parameters set by a physician; the option for bolus dosing can be included for patients receiving continuous opioid infusion as appropriate

Equipment & Supplies

1. Patient chart
2. Yellow sticker
3. Doctors pre-printed orders
4. 2 Saf-T-Intima SC butterfly needles
5. 2 Alcohol swabs
6. 1 Clear link cap
7. 1 Small Tegaderm
8. CADD Pump and CADD Pump key/remote cord
9. CADD Pump tubing (available from supply room)
10. CADD pump pouch
11. Four (4) AA batteries
12. Medication mini bag from pharmacy

Practice Guideline

1.0 Assessment and Monitoring:

1. An understanding of the medication side effects and the specific disease processes must be taken into consideration while monitoring the patient with a PCA. Assessment results may be indicative of either. It's important to note that all significant changes in the patient's condition, regardless of etiology, must be reported to the physician
2. Patient assessment as per clinical guidelines for continuous subcutaneous Midazolam/ Fentanyl/ Hydromorphone as well as monitoring of CADD Solis functionality and site

1.1 Assessment Includes:

1. Pain intensity using pain scale of 0 (no pain) to 10 (worst pain) or Baker-Wong Faces pain scale at rest and at activity
2. Level of consciousness
3. Vital Signs including respiratory rate, oxygen saturation and sedation scale monitoring
4. Side effects such as pruritus, nausea, vomiting, and/or urinary retention,constipation
5. Insertion site for redness, swelling or leakage
6. Site dressing
7. CADD pump parameters

2.0 Site Selection for Hypodermocolysis and Subcutaneous Butterfly Insertion:

Refer to: Hypodermoclysis – Guidelines for Subcutaneous Fluid Administration in Acute Care Settings for End of Life Care

- Ideal sites are the superior interscapular region, subclavicular area, abdomen (2.5 cm away from the umbilicus), and anterior/lateral aspect of the thighs

NOTE**:** Avoid breast tissue, axillary region, lateral placement near shoulder, perineum, and groin. Other areas to avoid are skin folds, scarred, infected, irritated, edematous, bony, and highly vascularized areas.

NOTE: Do **not** use the same site for medication administration and subcutaneous hydration.

Subcutaneous Insertion:

Refer to: "Subcutaneous Butterfly Cannula – Insertion: Maintenance and Medication Administration Guideline"

2.1 Insertion of Subcutaneous Site:

- Prime the CADD tubing as per the Resource Manual. It is not possible to prime the Saf-T-Intima SC needle prior to placement. When CADD tubing is fully primed connect to the positive pressure cap and continue to prime. Closely watch the fluid advance and stop when it has reached the insertion site

3.0 Initial set-up and/or reprogramming of the CADD:
(Follow the step-by-step instructions in the Resource Manual for the CADD PCA Pump)
Two qualified RNs will initially program the pump according to the physician's order and the CADD pump parameters (set up by pharmacy)

3.1 The following values will be programmed into the pump:

1. Reservoir Volume
2. Medication concentration
3. Continuous infusion rate calculated as ml/ or mg/hr
4. Breakthrough dose in ml/ or mg/ time
5. Lockout time

4.0 Monitoring:

Follow the CADD PCA Resource Manual Instructions for:

Frequency:

1. Battery change (observe the Battery indicators function)
2. Medication bag (q24–72 hrs) and follow pharmacy recommendations on the medication label
3. Tubing Change (q48-72hr) (CADD tubing changes must be done in conjunction with bag change)
4. Clear demand dose Q shift
5. Clear PCA dose q shift
6. Two RNs to check the settings of the pump against the doctor's orders Q shift

Note: Align the mini bag and CADD pump tubing into the pouch so that the spike is in straight position; avoid kinks of the spike or the tubing while lining the mini bag and tubing in the pouch

Expected Patient Outcome

Care Plan:

1. The patient's care plan should indicate the specific patient centered goal (or expected outcome) for symptom relief and interventions
2. The expected patient outcome will be assessed Q one hour/PRN and necessary changes will be made to the care plan
3. Patient is comfortable and symptoms are managed

Patient/Family Education

The RN has the responsibility to ensure the patient and/or family and caregivers understands the purpose and function of the PCA infusion

Teach patient/family how to control their pain using the CADD PCA:

1. How to manage pain using the PCA mode
2. How to assess the SC site
3. How to identify medication side effects

Teach the patient/family the basic function of the CADD pump:

1. Alarms and messages (found in the Resource Manual for the CADD pump)
2. How to use the PCA breakthrough dose for pain
3. How to position the CADD pump pouch while lying in bed, while walking and or while toileting

NOTE: If patient is going to be discharged home with CADD Prizm then it is the nurse's responsibility to teach patient/family how to administer medication through the subcutaneous butterfly

Evaluation

1. Improved symptom relief according to patient self-report and/or behavioral indicators of comfort
2. Improved quality of life due to symptom control
3. Opportunity for patient to engage in valued activities with loved ones due to portability of CADD pump

Documentation

1. Document in "Medication Record – For Continuous Subcutaneous Infusion via CADD/PCA Pump**"**
2. "Continuous Subcutaneous Infusion Analgesia and/or Sedation Recording Log
3. Nurses Notes

Related Documents

1. Resource Manual for CADD Solis and CADD Prizm PCA
2. Community Palliative Care VCH Clinical Practice Guidelines
3. CADD Pump Infusion – PCA Mode guidelines
4. CSCI medication guidelines

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