

Milrinone Home Infusion



Home Health Foundation

The Leaders in Home Health and Hospice Care

Positive Inotropic drugs

- Directly increase cardiac contractility
- Include dobutamine and milrinone
- Considered high alert medications
 - Consideration should be made for double checking infusion pump parameters when each infusion container is initiated
- Should be administered only by nurses who are educated and competent in inotropic drug infusions



Milrinone

- ▶ Inhibits phosphodiesterase III
- ▶ Causes an increase in intracellular adenosine monophosphate which
 - ▶ stimulates intracellular reactions leading to increased calcium transport, resulting in increased:
 - ▶ contractility
 - ▶ stroke volume
 - ▶ cardiac output.
 - ▶ relaxation of smooth muscle cells which results in peripheral vasodilation (decreasing blood pressure)

Milrinone Home Infusion

RISKS

Catheter related
bloodstream infections
Increase in mortality
Arrhythmias
Hypotension
Family burden

BENEFITS

Enables patient to go home
from the hospital
Increases quality of life by
decreasing signs and
symptoms
Fewer hospitalizations

Patient selection

- ▶ On maximal therapy and continue to have refractory symptoms at rest
- ▶ In the process of being evaluated for or is awaiting mechanical circulatory support or cardiac transplantation
- ▶ Availability of a caregiver
- ▶ Caregiver and patient motivation to participate in infusion related care and monitoring
- ▶ Central vascular access device is required for inotropic drug infusions

Specific physician orders

- ▶ Drug dose
- ▶ Infusion duration/frequency
- ▶ Laboratory tests/frequency
- ▶ Parameters for physician notification
 - ▶ Weight gain
 - ▶ Changes in vital signs (BP,HR)
 - ▶ Decreased urination
 - ▶ Signs/symptoms: confusion, dizziness, nausea/vomiting, increased fatigue, muscle cramps

Be prepared

- ▶ Infection control- line care
- ▶ Storage and handling of medication
- ▶ Pump operations, trouble shooting and alarms
 - ▶ Two pumps in the home- back up
- ▶ Inotropic infusion administration
- ▶ Medication therapeutic effects and side effects
- ▶ Emergency plan

The visit: cardiac assessment

- ▶ Weight- compare to previous weights on a daily log
 - ▶ Maintained by patient
 - ▶ Via telemonitoring data
- ▶ Blood pressure
- ▶ Pulse apical and radial
 - ▶ prior to starting infusion and
 - ▶ 10-15 minutes after infusion has been running
 - ▶ identify any increase in pulse rate or rhythm changed from baseline
- ▶ Respiratory rate and level of dyspnea

The visit: cardiac assessment

- ▶ Lung sounds/presence of cough and characteristics
- ▶ Presence or absence of edema (location and grade)
- ▶ Presence or absence of jugular vein distension
- ▶ Patient complaints of chest pain/palpitations
- ▶ Nail bed color and capillary refill time
- ▶ Skin temperature and turgor
- ▶ Urine output and voiding patterns
- ▶ Changes in sensorium or level of consciousness
- ▶ Current laboratory findings, as available

The visit: next steps

- ▶ Notify physician of any abnormal findings or changes from previous assessment
- ▶ Follow the specific procedures for the appropriate vascular access device care
- ▶ Obtain laboratory work per physician orders
- ▶ Administer inotropic agents
- ▶ Check blood return from 2nd lumen and flush
- ▶ **DO NOT FLUSH INOTROPIC LUMEN-** this will bolus the patient with medication

The visit: aftercare

- ▶ Document in patient's record:
 - ▶ Pre- and post-procedure assessment
 - ▶ Name of medication, dose, route, duration of infusion
 - ▶ Patient's response to infusion
 - ▶ Any patient/caregiver education provided
 - ▶ Any communication with the physician

Milrinone in the home

- ▶ First dose administered in the inpatient setting
- ▶ Allows patients to be in the home setting
- ▶ Decreasing hospital days minimizes risk of nosocomial infections
- ▶ May be used in a select pediatric population:
 - ▶ listed for heart transplant
 - ▶ recovering from cardiac surgery/transplant
 - ▶ in palliative care