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| DEPARTMENT: Poudre Valley Hospital Emergency Medical Services | POLICY DESCRIPTION: Drug Protocol for Nitroglycerin |
| PAGE: 1 of 1 | REPLACES POLICY DATED: 4/2011 |
| APPROVED: 10/21/16 | RETIRED: |
| EFFECTIVE DATE: 10/22/16 | REFERENCE NUMBER: 5330 |

SCOPE:

Poudre Valley Hospital EMS and represented Northern Colorado Services [see page 1]

PURPOSE: To define the use of nitroglycerin

Protocol: Nitroglycerin [NTG]

Pharmacology and Actions

- A. By decreasing peripheral vascular resistance, NTG causes blood-pooling in peripheral veins with a decreased venous return to the heart [preload].
- B. NTG may dilate coronary arteries and relieve coronary artery spasm.

Indications

- A. Chest pain or hypertension associated with angina or acute myocardial infarction.
- B. Cardiogenic pulmonary edema.
- C. In patients receiving CPAP, nitropaste is used after the initial SL nitroglycerin.
- D. All levels of EMT may assist patients with their own NTG spray or sublingual tablets if the medication was prescribed to the patient, if the prescribed dose has not already been taken, and if the medication is not expired. A direct on-line order from the physician is required for all PAM.
- E. NTG drips are approved for interfacility transport only. Paramedics cannot initiate or titrate this medication. NTG is administered via IV pump in separate IV access line using vented IV nitroglycerin tubing. IV NTG is supplied in glass bottles at 200 micrograms/ml.

Contraindications

- A. Patients taking Viagra (sildenafil), Cialis (tadalafil), Levitra (vardenafil), or other drugs in the same class should not be given nitroglycerin within 36 hours of use.
- B. DO NOT USE IF SBP<100. Blood pressure will be checked prior to and after each dose.
- C. Do not use in patients with trauma or obvious hypovolemia.
- D. Do not use in pediatric patients.
- E. Do not use if there is a hypersensitivity to Nitroglycerin or any ingredient in the product.

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F. Administer with caution in patients who have renal or liver failure.

Side Effects and Specific Information

- A. Generalized vasodilatation may cause profound hypotension and reflex tachycardia. Hypotension is particularly likely in patients with compromised preload. Patients who sustain hypotension after being administered nitroglycerin should have all sources of nitroglycerin removed, and should receive a normal saline fluid challenge [250cc].
- B. Other side effects include throbbing headache, flushing, dizziness, and burning under the tongue. **Do not** stand a patient after administration.
- C. For QRTs contacting medical control for authorization to assist a patient with their own medication, be prepared to report complaints, vital signs, and a focused examination of the patient [Cardiovascular, lungs, mental status]. Make sure the medication is not expired; check the dose prescribed, and make sure the patient is alert and able to consent to the medication assist.
- D. For sublingual administration, place the tablet or spray dose under the tongue, or have patient place tablet or spray under tongue. Have patient keep mouth closed [without swallowing] until the medications is dissolved and absorbed. Recheck vital signs within 2 minutes of medication administration, and record response and time. Nitroglycerin spray or pills can be administered every 5 minutes to a total dose of three SL pills, or three sprays [Including what patient had taken prior to arrival].
- E. Cardiogenic pulmonary edema which responds to nitroglycerin is usually associated with hypertension. Hypotensive patients should not receive nitroglycerin.
- F. Remove nitroglycerin paste or patches from the chest prior to defibrillation. Nitroglycerin is a fairly unstable substance.

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| Protocol: Nitroglycerin | EMT B | EMT IV | EMT I | EMT- P |
|--|------------------|-------------------|--------------|-------------------|
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| Chest pain [adults only] | | | | |
| Dose: 0.4mg tablet or one metered spray, SL every 5 minutes x3. | PAM | PAM | SO | |
| Dose: 0.4 mg tablet or one meter spray, SL every 5 minutes; no dose limit unless SBP drops below 90. | | | | SO |
| | | | | |
| CHF [adults only] | | | | |
| 0.4 mg tablet or one metered spray repeated every 3-5 minutes; no dose limit unless SBP drops below 90. | | | | SO |
| 1 inch of nitropaste applied to chest wall after first oral tablet or spray if using CPAP. If SBP drops below 90, remove the paste. | | | DO | SO |
| | | | | |
| Interfacility transport infusion [see indications] | | | | |
| Verify and document volumetric pump rate, medication, and dose against direct written physician order prior to departure. Verify and document IV site, type of catheter, and any problems with IV site [Inflammation, signs of infiltration or infection]. Do not adjust medication without direct physician order. [If orders call for titration of drip, the patient will require a SCT nurse as paramedics cannot titrate NTG]. | | | | DWO |
| If signs of infiltration or hypersensitivity develop during transport, discontinue medication and contact base physician. Treat hypersensitivity per protocol | | | | DO |
| If patient become hypotensive [SBP<90] during transport, discontinue medication and contact base physician. | | | | DO |
| REFERENCES: | | | | |