Suspected Cardiac Ischemia Chest Pain Protocol

When the following indications and conditions exist, a Paramedic can administer Nitroglycerin 0.4 mg spray SL and/or ASA two (2) 80 mg chewable tablets, and ACPs may also administer Morphine Sulfate IV, according to the following protocol. A maximum of six (6) doses of Nitroglycerin and one (1) dose of ASA may be administered regardless of any previous self-administration.

Indications

An alert patient experiencing chest pain consistent with that caused by cardiac ischemia OR experiencing his or her typical angina/MI pain.

Conditions

To receive Nitroglycerin: The patient must:
- be ≥ 40 Kg.
- be alert and responsive
- have used Nitroglycerin in the past (this includes spray, tablets, or transdermal patch) or an IV is established and the paramedic is certified in IV Access
- NOT have taken a prescription erectile dysfunction medication (i.e. Viagra, Levitra, Cialis, etc). within the past 48 hours
- Have a Systolic BP ≥ 100 mmHg and a heart rate ≥ 60 and < 160 bpm.

To receive ASA: The patient must:
- be ≥ 40 Kg.
- be alert and responsive
- NOT have an allergy to ASA or other NSAID
- NOT have current active bleeding (GI or other bleeding disorders)
- have NO evidence of CVA or head injury within 24 hours prior to Paramedic assessment
- have a history of previous use of ASA with no adverse reaction if a known asthmatic

To receive Morphine Sulfate (ACP only): The patient must:
- Have a Systolic BP ≥ 100 mmHg
- NOT have an allergy to Morphine Sulfate

Procedure

1. Administer 100% O2, and document vital signs.

2. Initiate continuous cardiac monitoring and pulse oximetry (if available).

3. Place the patient in a sitting or semi-supine position.
**Suspected Cardiac Ischemia Chest Pain Protocol** (Continued)

4. If certified in IV therapy, attempt an IV (NS TKO). If an intravenous is not established, the paramedic may administer nitroglycerin only in patients with a history of previous Nitroglycerin use.

5. Confirm that the systolic BP is ≥ 100 mmHg and the heart rate is ≥ 60 bpm and <160 bpm.

6. Administer one dose of Nitroglycerin 0.4 mg spray SL, every 5 minutes as needed for chest pain, to a maximum of six (6) doses.

7. Administer ASA 160 mg (2 x 80 mg) for the patient to chew and swallow.

8. Check vital signs before each dose of Nitroglycerin. Stop Nitroglycerin administration if systolic BP drops by more than 1/3 of the initial systolic blood pressure. Should the patient’s vital signs fall outside of the designated parameters at any time during the call, Nitroglycerin will be discontinued and the patient will not receive any additional Nitroglycerin for the remainder of the call.

9. If the patient’s vital signs have changed then follow the Intravenous Access & Fluid Administration Protocol.

10. If after a total of three (3) doses of Nitroglycerin and the patient is still complaining of chest pain, an ACP needs to confirm that the patient is not allergic to Morphine Sulfate and systolic BP ≥ 100 mmHg. An ACP may then administer 2 mg Morphine Sulfate IV. This may be repeated every 5 minutes provided systolic BP is ≥ 100 mmHg and the pain has not been relieved by Morphine and additional Nitroglycerin, to a maximum of 5 doses (10 mg total) of Morphine Sulfate. Nitroglycerin may still be administered to a maximum of six doses.

11. Obtain a 12-lead ECG (if available) according to the 12-Lead Acquisition Protocol.

12. Contact the BHP if further orders are required.

**Notes**

1. If the patient’s chest pain fully resolves and then recurs, it is treated as a new episode of chest pain and the Nitroglycerin protocol is repeated, but not the ASA.
2. Patients may be reluctant or refuse to take ASA. In such cases, respect the patient’s wishes and notify the receiving hospital staff on arrival.
3. Administer ASA even if the patient has already taken their normal dose prior to your arrival, or even if the chest pain has resolved.
Suspected Cardiac Ischemia Chest Pain Protocol Diagram

ABC’s
100% 02
Cardiac Monitor

Chief Complaint:
• Chest pain, presumed cardiac origin

Physical Examination:
• Responsive and alert
• Weight ≥ 40 kg

Vital Signs

Assess for Nitroglycerin administration.
• Systolic BP ≥100 mmHg
• Heart Rate ≥60 or <160 bpm
• History of NTG use or an IV is established and the paramedic is certified in IV access
• Has not used ED medications in past 48 hrs

Assess for ASA administration.
• Not have an allergy to ASA or Non Steroidal Anti-inflammatory
• Not have current active bleeding
• Have no recent Head Injury or CVA within past 24 hrs
• Previous use of ASA with no adverse reaction if Asthmatic

Administer nitroglycerin spray sublingually
• Initiate transport
• May repeat q 5 min pm (max. 6 doses)

Administer 2 x 80 mg chewable ASA

Notes
1. If the patient's chest pain fully resolves and then recurs, it is treated as a new episode of chest pain and the nitroglycerin protocol is repeated, but not the ASA.
2. Patients may be reluctant or refuse to take ASA. In such cases, respect the patient’s wishes and notify the receiving hospital staff on arrival.
3. Administer ASA even if the patient has already taken their normal dose prior to your arrival or even if the chest pain has resolved.
Acute Cardiogenic Pulmonary Edema Protocol

When the following conditions exist a Paramedic can administer Nitroglycerin 0.4 mg per dose or 0.8 mg per dose sublingually according to the following protocol. A maximum of six (6) doses of Nitroglycerin may be administered regardless of any previous self-administration.

Indications

Patient is in moderate to severe respiratory distress AND suspected of being in acute cardiogenic pulmonary edema.

Conditions

To receive Nitroglycerin: The patient must:

- be ≥ 40 Kg.
- have used Nitroglycerin in the past (this includes spray, tablets, or transdermal patch) or an IV is established and the paramedic is certified in IV therapy
- NOT have taken prescription Erectile dysfunction medication (i.e. Viagra, Levitra, Cialis, etc.) within the past 48 hours
- Have a Systolic BP ≥ 100 mmHg and a heart rate ≥ 60 and < 160 bpm.

Procedure

1. Place patient in sitting or semi-supine position, administer 100% O₂, and assist respirations via BVM as required.
2. Initiate cardiac monitoring and pulse oximetry (if available).
3. If certified in IV therapy, attempt IV access.
4. Administer doses of Nitroglycerin q 5 minutes to a maximum of 6 doses according to the following chart:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Systolic BP</th>
<th>Nitroglycerin Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV established; systolic BP ≥ 140mmHg</td>
<td>0.8 mg</td>
<td></td>
</tr>
<tr>
<td>IV not established; systolic BP ≥ 140mmHg</td>
<td>0.4 mg</td>
<td></td>
</tr>
<tr>
<td>IV established; systolic BP ≥ 100–139mmHg</td>
<td>0.4 mg</td>
<td></td>
</tr>
<tr>
<td>IV not established; systolic BP &lt; 140mmHg</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

5. Check vital signs before each dose of Nitroglycerin. Stop Nitroglycerin administration if systolic BP drops by more than 1/3 of the initial systolic blood pressure. Should the patient’s vital signs fall outside of the designated parameters at any time during the call, Nitroglycerin will be discontinued and the patient will not receive any additional Nitroglycerin for the remainder of the call.

Notes

1. Salbutamol should generally not be administered for patients with pulmonary edema.
2. If BP ≥100 and <140 and the patient has Chest Pain, then a Paramedic may administer Nitroglycerin as per the Suspected Cardiac Ischemia Chest Pain Protocol.