

# Nitroglycerine for Ischemic Chest Pain Protocol

revised October 2008



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## **Preamble**

Ischemic chest pain is caused by decreased blood flow through the coronary arteries. Nitroglycerine dilates the coronary arteries and may increase myocardial blood flow, relieving ischemic chest pain.

## **Requirements**

1. Fully licensed Technician-Paramedic.
2. Certification in nitroglycerine for ischemic chest pain protocol by the Medical Director.

## **Indications**

1. Adult patients with complaint of chest pain that is suspected to be of ischemic origin (see appendix).

## **Contraindications**

1. Known or suspected sensitivity to nitroglycerine.
2. Systolic blood pressure less than 100 mm Hg.
3. Use of sildenafil (Viagra<sup>™</sup>) in the past 24 hours, or tadalafil (Cialis<sup>™</sup>) in the past 72 hours. (for NTG).

## **Drug Doses and Frequencies**

1. nitrospray
  - 0.4 mg sublingually
  - may repeat q5minutes prn
  - maximum of 3 doses
  - hold if pain is relieved or systolic blood pressure drops below 100 mm Hg

2. nitroglycerine tablets
  - 0.3 mg sublingually
  - may repeat q5minutes prn
  - maximum of 3 doses
  - hold if pain is relieved or systolic blood pressure drops below 100 mm Hg

Note: in the event of prolonged transport times, additional doses of nitroglycerine may be administered with orders from physician via on-line medical control or by prior expressed written instructions from the Medical Director.

### **Procedure**

1. Perform patient assessment and record vital signs, level of consciousness, and oxygen saturation.
2. Assess that patient meets criteria for this protocol.
3. Ensure there are no contraindications to use of this protocol.
4. Place the patient in semi-fowler's position, if no contraindication.
5. Administer supplemental oxygen as required.
6. Attach patient to cardiac monitor.
7. Administer nitroglycerine. Do not use the patient's own medication.
8. Repeat assessment, including vital signs, level of consciousness, oxygen saturation, and effect of nitroglycerine after each dose.
9. If hypotension occurs, it should be managed based on the appropriate protocol.

### **Documentation Requirements**

The following information must be documented on the patient care report form:

1. Patient's presenting signs and symptoms, including vital signs, level of consciousness and oxygen saturation.
2. History of pain, its severity, character, and associated symptoms.

3. Indications for protocol use.
4. Dose, formulation, and time for each nitroglycerine dose used, and resulting clinical effects.
5. Repeat assessment and vital signs, as indicated.
6. Changes from baseline, if any, that occur during treatment or transport.
7. Signature and license number of Technician-Paramedic performing any transfer of function skills.

### **Certification Requirements**

1. Attend in-depth classes and lectures on cardiac anatomy and physiology, and pathophysiology and differential diagnosis of chest pain.
2. Demonstrate an understanding of the pharmacology and mechanism of action of nitroglycerine.
3. Identify signs and symptoms of ischemic chest pain.
4. Pass a written examination.
5. Certification is by the Medical Director.

### **Recertification Requirements**

1. Review class and recertification is done every 12 months.
2. A record will be kept to document all cases where this protocol is used.

### **Decertification**

1. Decertification is at the discretion of the Medical Director or the Provincial Medical Director, Emergency Medical Services, Manitoba Health & Healthy Living.

## **Quality Assurance Requirements**

1. Appropriate quality assurance policies must be in place. The Medical Director or designate must review all instances where this protocol is used. As a minimum, the following must be assessed:
  - i) appropriateness of implementation
  - ii) adherence to protocol
  - iii) any deviation from the protocol
  - iv) corrective measures taken, if indicated
2. Yearly statistics for protocol use compiled and forwarded to Emergency Medical Services, Manitoba Health & Healthy Living.

## **Appendix**

Clinical features of ischemic chest pain.

1. Characteristics  
squeezing, pressure, heaviness, vise-like, aching, dull
2. Location  
usually retrosternal, but may be to the left side of the chest or epigastrium; often radiates to the jaw, arms (typically left), or to the back
3. Associated Symptoms  
nausea, vomiting, sweating, shorness of breath, dizziness, palpitations
4. Risk Factors  
male sex, smoking, hypertension, obesity, hypercholesterolemia, diabetes, family history
5. Other  
often related to exertion and relieved by either rest or nitroglycerine; may be associated with orthopnea