

Pain Management Update

SUPERIOR EMS

27-Sep-18

What is pain?

- ▶ An unpleasant sensation that can range from mild, localized discomfort to agony. Pain has both physical and emotional components. The physical part of pain results from nerve stimulation. Pain may be contained to a discrete area, as in an injury, or it can be more diffuse, as in disorders like fibromyalgia. Pain is mediated by specific nerve fibers that carry the pain impulses to the brain where their conscious appreciation may be modified by many factors.

Principles of Pain Management

- ▶ A patient suffering extreme pain can focus on little else and is often uncooperative and unwilling to help the first aider apply timely and effective treatment. A gentle but confident and professional approach to any patient will build trust and make treatment administration easier.
- ▶ Whether applying simple pain management methods such as ice, or formal pain management techniques, the principles are the same – relieve the patient’s suffering, as you are unlikely to be able to stop the cause of the pain.

Measuring Pain

- ▶ Verbal Numerical Rating Scale
 - ▶ This scale asks the patient to rate their pain from “no pain” (0) to “worst pain possible” (10) and is suitable for use in adults and children over six years of age who have an understanding of the concepts of rank and order. Avoid using numbers on this scale to prevent the patient receiving cues. Some patients are unable to use this scale with only verbal instructions but may be able to look at a number scale and point to the number that describes the intensity of their pain.
- ▶ Wong - Baker FACES Pain Rating Scale
 - ▶ This scale can be used with young children aged three years and older and may also be useful for adults and those from a non-English speaking background. Point to each face using the words provided to describe the pain intensity. Ask the child to choose face that best describes his/her own pain and record the appropriate number.

Wong-Baker FACES™ Pain Rating Scale



Current options in Pain Management

- ▶ NSAIDS
- ▶ Acetaminophen
- ▶ Antidepressants
- ▶ Anti-Seizure Medications
- ▶ Steroids
- ▶ The Dreaded “Opioids”

- ▶ But Wait... There is something New!
 - ▶ Well its not actually new, its been in use over 30 years, just not in Canada until this June...

Methoxyflurane

PENTHROX®

Penthrox®

- ▶ The inhaled analgesic methoxyflurane can relieve discomfort, but will not completely eliminate pain. Methoxyflurane is an analgesic gas that is inhaled to provide pain relief. It comes in liquid form which vaporises at room temperature allowing inhalation by the patient. The liquid is clear and colourless with a fruity odour.
- ▶ Onset/Duration
 - ▶ Onset is 2-3 minutes
 - ▶ Duration is 4-5 minutes
- ▶ Effective Duration
 - ▶ 3ml = 20-30 min

► **Mode of Action**

- The mode of action is how the analgesic works to provide pain relief. On inhalation, methoxyflurane passes easily into the blood across the respiratory membrane in the lungs, in a similar way to oxygen. Methoxyflurane acts directly on the central nervous system, blocking receptors to reduce the sensation of pain.

► **Method of Delivery**

- The Pentrox Inhaler is a green cylinder designed to hold the methoxyflurane as it vaporises, to allow inhalation by the patient. It is shown below with an activated carbon filter attached. The activated carbon filter is used to filter unused methoxyflurane from the air exhaled by the patient, minimising exposure to the gas by the first aiders and bystanders.



Safety

- Methoxyflurane is expelled from the patient's lungs in the same form as it is inhaled. The methoxyflurane exhaled by a patient may be absorbed and have an effect on people nearby.
- Frequent exposure to or large doses of methoxyflurane may be harmful to the kidneys, so it is essential that methoxyflurane is only used in well-ventilated areas to avoid being exposed to the gas.
- To minimise exposure to methoxyflurane, an activated carbon filter should be used when administering to a patient indoors.

PPE

- ▶ When pouring methoxyflurane into the inhaler, you should wear appropriate PPE (gloves and eye protection) to minimise the chance of spilling methoxyflurane on his/her skin or splashing in his/her eyes.
- ▶ NEVER operate without the filter on!
- ▶ Recommended to turn the “vent” on in the ambulance when patient is using this device
- ▶ Remember what they breathe in of this drug, they breathe out, so you can easily get high off it!

Volatility

- ▶ Methoxyflurane is a highly volatile liquid, which may ignite under relatively normal conditions. The flashpoint (lowest temperature for vapour above a liquid to be ignited in air) of methoxyflurane is 62.8°C in air and 32.8°C when mixed with oxygen. It is important that the methoxyflurane bottle is not left in direct sunlight. Methoxyflurane ignites easily and extra care should be taken when using supplementary oxygen therapy, in the presence of naked flames or in other flammable situations.

Contraindications/Precautions

- ▶ A contraindication is a reason not to use a course of treatment or a medication. Contraindications for administering methoxyflurane to a patient include:
 - ▶ The patient cannot understand or comply with the instructions for use.
 - ▶ The patient has a history of kidney disease (renal impairment or renal failure), as methoxyflurane may cause kidney damage.
 - ▶ There is a decreased level of consciousness - Head injury or drug/alcohol induced
 - ▶ The patient has a known allergy to methoxyflurane.
 - ▶ There has been a severe allergic reaction to general anaesthetics in the patient or the patients family.
 - ▶ Patients who have received methoxyflurane at any time in the past week.
 - ▶ Patients with inadequate respiratory effort or rate.

- ▶ A precaution is a condition where caution is indicated but where the condition does not necessarily rule out the treatment or medication. Where patients exhibit any of the following conditions, caution should be taken, paying particular attention to these conditions and stopping treatment if the first responder becomes concerned:
 - ▶ Respiratory depression, as it may worsen the condition
 - ▶ Cardiovascular instability, as it may worsen circulatory depression.

- ▶ A complication of methoxyflurane treatment is loss of consciousness, the danger of which is multiplied in patients who already have a depressed level of consciousness. The patient's level of consciousness can be assessed using the AVPU Scale. The scale outlines four general levels of consciousness from Alert to Unconscious.
- ▶ Alert
 - Voice: Responds to voice
 - Pain: Responds purposefully
 - Unconscious

Administration

- ▶ Methoxyflurane is self-administered by the casualty through an inhaler, which is disposable and for single use only.
- ▶ Methoxyflurane is self-administered for two reasons. The first reason is that self-administration ensures that if the patient loses consciousness the inhaler will fall away from the face and the patient will inhale room air. Once the patient stops inhaling they will quickly regain consciousness.
- ▶ The second reason is that as the patient is the best judge of their own pain, self-administration allows the patient to control their pain. The patient should be encouraged only to inhale methoxyflurane to achieve a more bearable level of pain.
- ▶ Patients with facial injuries may find the mouthpiece uncomfortable. In this situation the inhaler can be connected to a standard resuscitation mask. Patients with facial or jaw injuries may not be able to tolerate either mask or mouthpiece. Always be sure you are not worsening an injury in your attempt to treat the patient's pain.

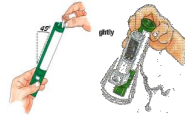
Procedure

1. Reassure the patient.
2. Confirm indications for use (patient is in pain).
3. Ascertain that there are no contraindications to methoxyflurane use.
4. Obtain methoxyflurane and check the expiry date and that the seal has not been tampered with.
5. Explain the procedure to the patient
 - a) This is methoxyflurane, which will help relieve your pain
 - b) You must put the inhaler in your mouth while you breathe in
 - c) The gas will only be inhaled when you breathe in
 - d) Continue inhaling until the pain starts to dull. Aim for relief of discomfort rather than complete elimination of pain
 - e) If you feel any side effects, remove the inhaler. The unpleasant effects will wear off, but your pain will also worsen.
6. Ensure that the patient understands the instructions for use.

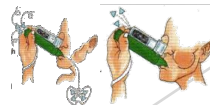
7. Prepare the inhaler for use
 - a. Insert the activated carbon device into the dilutor hole



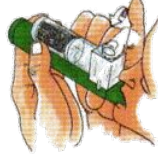
- b. Hold the inhaler upright with the mouthpiece down. Open the vial and pour the full 3ml into the base cap. Shake gently and wipe the mouthpiece.



8. Pass the inhaler to the casualty and allow him/her to breathe through the inhaler.



8. After the casualty has taken 8-10 breaths, he/she can be instructed to place a finger over the diluter hole to increase the concentration of methoxyflurane being inhaled.



9. Instruct the casualty to inhale the methoxyflurane intermittently but sufficiently to provide adequate pain relief.



Handover to Municipal EMS

- ▶ State that the patient has been given methoxyflurane
- ▶ The patient may take the device for transport if receiving crew wishes to continue management
- ▶ Standard report to EMS
- ▶ “Get the gloves on... It may be a battle”... or a “WTF” moment when they see it for the first time.

Patient Handout Report

- ▶ The patient must be provided with the handout included in the medication package as per the medical directive and appropriate information documented on the package insert.

Documentation

- ▶ Standard patient care record is required
- ▶ The drug is listed under TTT as the code (for Trial)
- ▶ Report must be given to the supervisor to be sent to the medical director for review. (All use of a trial medication must be reviewed)

