FENTANYL-INDUCED MUSCLE RIGIDITY

Background

Fentanyl-induced muscle rigidity, also known as “chest wall rigidity” and “wooden chest syndrome” is a complication of intravenous injection of fentanyl that has been recognized in the induction of anesthesia in hospital populations. It is associated with rapid injection of high doses of fentanyl and characterized by truncal, neck and jaw muscle rigidity with difficulty ventilating the patient. Fentanyl-induced muscle rigidity is being reported in people using illicit drugs containing fentanyl; however reports in the literature from the community, Insite and emergency health services indicate the rigidity responds rapidly to naloxone. The risk of rigidity may be increased by conditions or medications which reduce dopamine levels including Parkinson’s disease and some antidepressants.

Recommendations for by-standers witnessing fentanyl-induced muscle rigidity

The goal for by-stander overdose response is to 'rescue' the person having an overdose until professional (paramedic) assistance arrives. We hear large doses of naloxone are being administered rapidly in the community. This is concerning as it may precipitate withdrawal and vomiting, which in the presence of rigidity is dangerous.

Recommendations:

1) Call 911 immediately

2) Attempt to ventilate the patient with the technique you are most comfortable using. If airway support equipment and trained individuals are available, use a two person bag-valve mask technique*

3) Administer naloxone - Do not delay.
Naloxone should be administered in overdoses with muscle rigidity as follows:

   A) Muscle rigidity where ventilation is inadequate:
      i.   Immediately administer 0.4 mg naloxone by intramuscular injection.
      ii.  If the patient does not respond sufficiently, administer additional naloxone doses every 2 minutes.
      iii. The following dosing schedule can be followed where higher dose naloxone is available:
            0.8mg, 2mg, 4mg.

   B) Muscle rigidity where ventilation is adequate (i.e. ventilation is adequately maintained, particularly when oxygen monitoring is available) naloxone can be given more conservatively to lower the risk of inducing withdrawal and vomiting:

      i.   Immediately administer 0.4 mg naloxone by intramuscular injection.
      ii.  If patient does not respond sufficiently, administer additional naloxone doses every 3-5 minutes.
      iii. The following dosing schedule can be followed if needed where higher dose naloxone is available: 0.8mg, 2mg, 4mg.

4) If the patient loses a pulse: perform CPR, assist ventilation and administer 2 mg of naloxone immediately if available.

* A two person bagging technique: one rescuer uses both hands to form a tight seal with the mask around the mouth and nose of the patient and a second rescuer operates the bag.

24-July-2017
Safer drug use recommendations to reduce the risk of muscle rigidity

Fentanyl-induced muscle rigidity may be related to higher doses of fentanyl which are administered rapidly; in the illegal drug supply the amount of fentanyl and other substances are unknown.

Please be safe:

- It is important that help (9-1-1) is called immediately.
- Do not use alone
  - use drugs in an overdose prevention site or supervised consumption site where possible
  - have someone nearby who can call for help
- Get trained in overdose response and have naloxone available
- Start low (test a small amount of the drug) and go slow
- Know your tolerance: if recently using less drugs or feeling unwell use less drug
- Don’t mix drugs or drugs with alcohol

References


