

Safe Use of Alfentanil Injection (in Palliative Care)

Alfentanil is an injectable strong opioid which is 30 times more potent than oral morphine. It is used, following specialist advice, for moderate to severe opioid responsive pain in palliative patients with stage 4-5 chronic kidney disease (eGFR <30ml/min/1.73m²), or severe acute renal impairment (see [Scottish Palliative Care Guideline on Alfentanil](#) for other indications). It is administered as single subcutaneous injections or as a continuous subcutaneous infusion via a syringe pump. The potential risks with injectable alfentanil, and associated good practice points to reduce any risk, are outlined below:

Potential risks

1. Wide dose range

Alfentanil can be prescribed over a wide dose range. Consequently doses may be written in **MICROgrams** or **MILLIgrams** leading to prescribing or administration errors.

Example of a low dose: 200**microgram** subcutaneous alfentanil for an opioid- naïve patient (equivalent to 3**mg** of subcutaneous morphine)

Example of a high dose: 10**mg** subcutaneous alfentanil for severe opioid-responsive pain (equivalent to 150mg of subcutaneous morphine or 300mg oral morphine)

When titrating doses be aware smaller incremental increases may be appropriate due to strength of alfentanil. If unfamiliar with alfentanil convert your calculation back to oral morphine (multiply by 30) to give a better idea of the dose of alfentanil you are prescribing. E.g. patient on 5mg alfentanil and considering dose increase to 10mg, this would be equivalent of increasing from 150mg oral morphine to 300mg oral morphine which would be too large an increase and likely to result in side effects or toxicity.

2. Strengths of injection

The following two strengths of alfentanil injection are used in palliative care and packaging can be similar, particularly the Rapifen® brand:

- **500micrograms/mL - presented as a 1mg/2ml ampoule**
- **5mg/mL (TEN times stronger) – presented as a 5mg/1ml ampoule**

Due to the wide dose range, an individual clinical area may be caring for a patient requiring the low strength injection *and* a patient requiring the high strength injection. Stock of both strengths increases the risk of incorrect product selection and subsequent administration of an incorrect dose.

3. Similar sounding drug names

Alfentanil is similar sounding to fentanyl and mix-ups have previously been reported with both drugs. As fentanyl is four times more potent than alfentanil, the clinical consequences of a mix-up error would be significant.

Practice points

1. For palliative care dosing advice refer to the [Scottish Palliative Care Guideline on Alfentanil](#)
2. To reduce the risk of misreading the dose of alfentanil (or any other medicine):
 - a) Do not abbreviate the word micrograms (it is acceptable to abbreviate the word milligrams to mg)
 - b) Always prescribe doses less than 1mg in micrograms rather than milligrams
 - c) Where possible, avoid using a decimal point. If a decimal point is required to be used, good practice is to write the dose in words as well as figures.
3. Training on the prescribing, preparation, administration and dispensing of injectable medicines must emphasise the difference between micrograms and milligrams i.e. 1000micrograms equals 1milligram
4. Stop and check that the box you pick up is:
 - a) the right medicine**
 - b) the right strength**
5. A *fully independent* second check is essential for the preparation of all injectable medicines
6. If both strengths of alfentanil injection are required on wards then:
 - a) Store separately in the CD cupboard
 - b) If concerned about risk of having both strengths in stock contact the pharmacy team in the hospital to return the high strength (5mg/ml) preparation to pharmacy as soon as possible.

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