Alfentanil TIVA: becoming a Maître D'

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with thanks to the SIVA committee for advice

SIVA
The Society for Intravenous Anaesthesia

Drawing up:

Standard preparation for TIVA is 100 mcg/ml solution

Add 5000 mcg (= 10 mls ampoule of alfentanil) to 40 mls 0.9% sodium chloride

Total syringe volume = 50 mls

Set up the pump:

Select Maitre or Scott Alfentanil Model
Change the Ce target (Cet) for decrement time to 50 ng/ml

Alfentanil Recipe :

For guidance only – titrate to patient characteristics and clinical effect)

Induction: Set Cet ~150-200 ng/ml (check the pump induction bolus is ≥10 mcg/kg)

Maintenance: (depending on degree of surgical stimulation)

High: Cet ~100-150 ng/ml
Moderate: Cet ~80 -100 ng/ml
Low: Cet ~50-60 ng/ml

NB: Important to down-titrate Cet around 20-40 mins before the projected end of surgery due to increased CSHT of this agent

Extubation: Cet ~40-60 ng/ml (usually successful)

Take home message:

Rapid onset but much less potent (1/40x Remifentanil)

Maitre model tends to underpredict plasma concentrations.

Use cautiously in high BMI patients where evidence is limited. Utilise the SOBA app and use Adj40BW (Servin), titrate to effect based on haemodynamic variables, and use pEEG to guide hypnotic administration to ensure adequate hypnosis.

Consider the longer CSHT, watch the time to decrement to 50 mg/ml & remember to down titrate towards the end of surgery

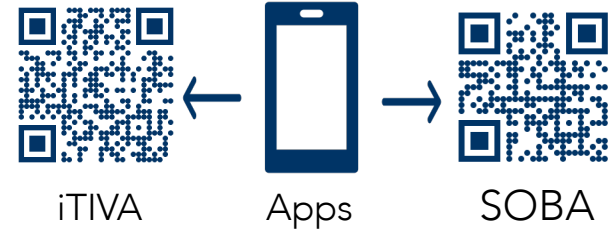Post operative analgesia can be managed in recovery with fentanyl boluses PRN

"My Pumps don't have an Alfentanil Model"

Use a simulation app e.g. iTIVA or Tivatrainer X to guide dosing

This table gives a manual regime for steady state concentrations up to ~120 min of surgery

Kinetics are linear and doses can be scaled to achieve higher Cet concentrations

iTIVA   Apps   SOBA

TIME	Cet 50 ng/ml	Cet 100 ng/ml	Units to administer
Bolus	10	20	mcg/kg
then start`@	20	40	mcg/kg/hr
15 mins	15	30	mcg/kg/hr
30 mins	10	20	mcg/kg/hr
120 mins	10	20	mcg/kg/hr

SIVA infographics - education with a big k_{e0}