Remifentanil

Ultrashort acting micro-opioid receptor agonist. The potency is similar to fentanyl. Rapidly crosses BBB. Onset: < 1 min. Offset 3–10 mins. Lowers ICP. Metabolism: non-hepatic hydrolysis by nonspecific blood and tissue esterases, ∴ no accumulation. Synergy with thiopental, propofol, isoflurane, and midazolam requires reducing doses of these agents by up to 75%. Side effects: bradycardia, hypotension (these side effects may be blunted by pretreatment with anticholinergics), N/V, muscle rigidity, pruritus (especially facial) dose-dependent respiratory depression at doses > 0.05 mcg/kg/min.

℞ Adult: avoid bolus doses. Start with drip of 0.05 mcg/kg/min. Titrate in 0.025 mcg/kg/min increments to a maximum of 0.1–0.2 mcg/kg/min. Add a sedative if adequate sedation is not achieved at the maximum dose. Wean infusion in 25% decrements over 10 minutes after extubation. Supplied: vials of 1, 2, or 5 mg powder to be reconstituted to 1 mg/ml solution.

Remifentanil (marketed by GlaxoSmithKline and Abbott as Ultiva) is a potent ultra short-acting synthetic opioid analgesic drug. It is given to patients during surgery to relieve pain and as an adjunct to an anaesthetic. Remifentanil is used for sedation as well as combined with other medications for use in general anesthesia. The use of remifentanil has made possible the use of high-dose opioid and low-dose hypnotic anesthesia, due to synergism between remifentanil and various hypnotic drugs and volatile anesthetics.

The ultrashort duration of action of remifentanil allowed easy performance of frequent neurological examinations in the neurosurgical intensive care unit. No patient experienced deleterious hemodynamic or neurological effects as a result of remifentanil use [1)].

1)
Tipps LB, Coplin WM, Murry KR, Rhoney DH. Safety and feasibility of continuous infusion of remifentanil in the neurosurgical intensive care unit. Neurosurgery. 2000 Mar;46(3):596-601; discussion 601-2. PubMed PMID: 10719856.