MORPHINE

Morphine is a potent analgesic acting on central and peripheral opioid receptors. Morphine has a wide range of potential side effects including respiratory depression, hypotension, nausea, itch, constipation, dysphoria, histamine release (causing urticarial and bronchospasm), and urinary retention. The onset of analgesia from morphine is relatively slow (5-10 minutes), but its effects last 2-4 hours. Morphine is metabolized in the liver into morphine-3-glucuronide (M3G) and morphine-6-glucuronide (M6G). The majority of morphine is excreted via bile as M3G, but about 10% is converted to M6G which is excreted by the kidneys. M6G is a potent analgesic which explains why toxic opioid effects can occur in renal failure. In critically ill patients with renal failure morphine should be avoided.

MORPHINE			
RECEPTOR TYPE	Gaba Receptors	α2-Receptors	Opioid Receptors
Receptor type			✓
ONSET	Rapid (< 1 minute)	Intermediate (1-3 minutes)	Slow (> 3 minutes)
Rate of Onset			✓
Rate of Offset			✓
EFFECT	Strong	Weak	None
Sedative effect (hypnosis and anxiolysis)		✓	
Amnesic effect			✓
Analgesic effect	✓		
RISKS	None	Lower Risk	Higher Risk
Cardiovascular effects (low pulse and/or blood pressure		✓	
Respiratory depression			✓
Potential to cause delirium		✓	
Active metabolites and/or accumulation			✓
Potential toxic effects			✓
COST	Low	Intermediate	High
Cost	✓		

DESIST