The intravenous anaesthetic agent. Benzodiazepines reduce the cerebral hypnotic, anxiolytic, anticonvulsant and amnesic action. Midazolam, like all of the benzodiazepines is a metabolite but cleared quickly and has a short context sensitive half time. Midazolam is metabolised hepatically into an active metabolite but cleared quickly and has a short context sensitive half time.

Central Nervous System Effects

Midazolam is a short acting agent, which is hypnotic, anxiolytic, anticonvulsant and amnesic agent. Benzodiazepines reduce the cerebral metabolic rate of O₂, cerebral blood flow and suppress rapid eye movement - REM sleep.

Reduced neuronal activity is reflected in a decrease in cardiac output. It may cause hypotension. It has several unique characteristics including antitussive and antipruritic properties which may result from neuro actions at a subcortical level. Subphotic doses may provide some analgesia in contrast to thiopentone which may be antialgic. It has anticonvulsant properties. It exhibits pharmacological synergism with benzodiazepines and opioids allowing reduction in doses.

The nervous system effects of propofol are similar to those of midazolam. It has several unique characteristics including antitussive and antipruritic properties which may result from neuro actions at a subcortical level. Subphotic doses may provide some analgesia in contrast to thiopentone which may be antialgic. It has anticonvulsant properties. It exhibits pharmacological synergism with benzodiazepines and opioids allowing reduction in doses.

Ketamine is presented as a racemic mixture or as the single S (+) enantiomer which is 2-3 times as potent, more quickly metabolised and has less severe side effects than as the R (-) enantiomer. It is soluble in water forming an acidic solution pH 3.5-5.5. It comes in liquid solution, 100ml/m in 2ml vials.

The cardiovascular effects of ketamine result primarily from inhibition of catecholamine reuptake and potentiation noradrenaline release from sympathetic ganglia. The direct action of ketamine is actually negative inotropic and vasodilatory but indirect effects of the noradrenaline usually predominate. In patients with depleted catecholamine stores ketamine may result in profound hypotension.

Ketamine doesn't depress CO, responsiveness. RR may decrease during induction and rarely there is apnoea. Upper airway reflexes and muscle tone are maintained, the TR may be reduced in effect from the other IVGAs. There is a CNS depression (risk of coughing) but also bronchodilation.

Like all the IVGAs it demonstrates rapid distribution due to the lipophilic ketamine. Ketamine has high hepatic clearance which approximates hepatic blood flow. There is an active metabolite norketamine. May demonstrate tolerance.