SUGAMMADEX – CAN WE AFFORD (NOT) TO USE IT?

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Sugammadex is a modified γ-cyclodextrin which selectively binds rocuronium (and vecuronium to a lesser degree) allowing rapid reversal of even the most profound neuromuscular block. Its mechanism of action differs from neostigmine and edrophonium and is relatively unique amongst medicines commonly used in anaesthesia.

The high affinity binding of rocuronium molecules is at a molar ratio of 1:1 with the resulting inactive complex being eliminated in the same way as sugammadex itself.

Reversal of blockade is dose dependent and follows rapidly, presumably after free relaxant is bound in the plasma causing a sudden fall in blood and then effect site concentrations.

Following intravenous injection, sugammadex demonstrates linear pharmacokinetic properties over the clinical dose range of 2-16 mg/kg. Vdss after a single dose is about 12 L and neither sugammadex nor its complex with rocuronium binds to plasma proteins or erythrocytes. There appears to be no metabolism of sugammadex and it is primarily excreted in the urine as unchanged drug with an elimination half-life of about 2 hours.

No clinically relevant effects on the cardiovascular and haemodynamic systems (including corrected QT interval prolongation) have been noted although the FDA witheld registration until further information is available regarding possible allergic responses.

Arguably the another unique feature of sugammadex is its price. With recommended doses of up to 16 mg/kg (depending on the depth of block to be reversed) and a price approximating $1 per mg, the cost of ‘immediately’ reversing an adult intubating dose of rocuronium would be well over a $1000.

One of the aims of the presentation will be to examine in more detail the exact mechanism of action and present possible methods of use that are more in keeping with the financial times! Symposium participants will also be invited to contribute to a discussion on the current role of sugammadex in New Zealand anaesthesia practice.