SUGAMMADEX A NOVEL REVERSAL AGENT

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Introduction:
For more than twenty years of using new intermediately acting steroidal relaxants (vecuronium and rocuronium) or dibenzylisoquinoline relaxants (atracurium, cisatracurium and mivacurium) and their introduction into clinical practice produced major alteration in the way we administer nondepolarizing relaxants. Although they provide the practitioner with additional clinical options that broaden the scope of services. Residual neuromuscular block still as one of the most important post-operative pulmonary complications in patient under going surgery under general anaesthesia. 1

Sugammadex (org 25969)
Gama cyclodextrin consists of 8/ glucose molecules bound together. It has a hydrophilic exterior and a hydrophobic internal cavity, which can form an inclusion complex with hydrophobic substrates. Cyclodextrins are generally not metabolized when administered intravenously to humans, and therefore are excreted intact by the kidneys, so it is not contraindicated for the diabetic patients. Cyclodextrins have been used for a long time as drug solvent constituents without toxic effects like in propofol and etomidate. The cavity of gama cyclodextrins are large enough to fit steroidal muscle relaxants. By including electrically charged side chains to the molecule, a selective binding for rocuronium and vecuronium is obtained. The bound relaxant can not be released anymore and becomes in active. Sugammadex was the most potent of the cyclodextrins. The host-guest ratio which 1:1 with the relaxant molecule intercalated in the cyclodextrin ring. Because there is no direct interaction with acetylcholine or a receptor involved in the cholinergic transmission, it is unlikely that muscarinic side effects will occur.

Conclusion:
Sugammadex is a novel relaxant binding agent that can reverse even deep neuromuscular block in a short time.