GUIDELINES FOR THE USE OF SUGAMMADEX AND NEOSTIGMINE/ GLYCOPYRROLATE

When reversal of neuromuscular blockade with rocuronium or vecuronium is desired, the following guidelines are suggested:

1. The degree of spontaneous recovery from neuromuscular junction blockade should be measured with an objective monitor. Our O.R.'s are equipped with the TOF-Watch, an accelerometer based device that objectively measures the train-of-four (TOF) ratio. Although many algorithms are based on train-of-four twitch counts, the TOF ratio should be used whenever possible to determine that it has reached 90%, i.e. the optimal minimum reversal level.

2. The ultimate goal of these guidelines is to ensure that all patients who receive neuromuscular blocking agents for a surgical or nonsurgical procedure have had its effects reversed to a train-of-four ratio of >=90% prior to extubation. This should be accomplished in a safe and cost effective manner, using either neostigmine/glycopyrrolate or sugammadex, guided by the following recommendations.

3. If 3- 4 twitches are present after TOF testing, a <=0.06 mg/kg dose of neostigmine (with an appropriate dose of glycopyrrolate) should provide satisfactory reversal of blockade to obtain a train-of-four ratio of >= 90% within 10-20 minutes in most patients. If reversal of neuromuscular blockade does not occur to a TOF %> 90 after administration of neostigmine/ glycopyrrolate in patients who have received rocuronium, then a dose of sugammadex at 1- 2mg/kg may be considered.

4. If 1-2 twitches are present after TOF testing with the use of rocuronium, a dose of sugammadex 2mg/kg should provide satisfactory reversal of blockade to obtain a train-of-four ratio of >= 90% in < 5 minutes in most patients.

5. If zero twitches are present after TOF testing associated with the use of rocuronium, reversal with sugammadex 4 mg/kg is recommended, with repeated dosing as necessary to achieve TOF >=90% TOF.

6. If necessary, rocuronium induced paralysis with a dose of 1.2 mg/kg (roughly twice the normal induction dose) can be achieved within 3 minutes after a dose of sugammadex of 16 mg/kg.

7. Reversal of neuromuscular blockade with sugammadex may be indicated, irrespective of the twitch count, for patients at risk for respiratory compromise in whom even a minimal level of residual blockade from rocuronium may increase the risk of pulmonary complications. Sugammadex may also be preferred for patients who have received rocuronium and who may not be able to tolerate the bradycardia or tachycardia often associated with the muscarinic effects of neostigmine and the muscarinic blocker glycopyrrolate.

8. Since sugammadex is eliminated unchanged via the kidneys, it should be used with caution or avoided in patients with a GFR <30 mL/min.

9. Sugammadex should be avoided in women of childbearing age who are taking oral or implanted hormonal contraceptives, as it has been shown to lower the plasma concentration of progesterone. These women will need counseling about alternative contraceptive methods for 7 days after sugammadex use.

References

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3. Eikermann M, Groben H, Husing J, Peters J. Accelerometry of Adductor

Pollicis muscle predicts recovery from respiratory function after neuromuscular blockade. Anesthesiology 2003 98(6); 1333-1337

4. Dosage guidelines based on information from FDA approved Prescribing Information provided by Merck Pharmaceutical for Bridion (sugammadex).