

MSA-CoA Consensus Statement on Implementation of Quantitative Neuromuscular Monitoring in Clinical Practice



**MALAYSIAN SOCIETY OF
ANAESTHESIOLOGISTS**



**COLLEGE OF
ANAESTHESIOLOGISTS, AMM**



Purpose

This statement outlines the integration of quantitative neuromuscular monitoring (qNMM) into clinical practice for patients receiving neuromuscular blocking agents (NMBAs). Its aim is to reduce the incidence of residual neuromuscular blockade (rNMB), improve patient safety, and align with current international guidelines and best practices.



Scope

This statement applies to anaesthesia healthcare professionals involved in the administration, monitoring, and reversal of neuromuscular blockade (NMB) in patients undergoing procedures under general anesthesia. In this document, the term ‘anaesthesia healthcare professionals’ refers to specialists, medical officers, nurses and medical assistants trained in the field of anaesthesiology.

3 Background

3.1.

NMBAs are commonly administered during anesthesia and critical care to facilitate intubation, improve surgical conditions, and support mechanical ventilation. However, rNMB remains highly prevalent, with rates reported up to 64%, despite advancements in NMBAs pharmacology and neuromuscular monitoring (NMM) technologies.¹⁻⁵

3.2.

rNMB is associated with residual paralysis and serious postoperative complications, including hypoxia, upper airway obstruction, aspiration, atelectasis, pneumonia, prolonged post-anaesthesia care unit (PACU) stay and increased healthcare costs.⁶⁻⁹

3.3.

Clinical assessment alone has been shown to be insufficient in reliably detecting recovery from neuromuscular blockade. Therefore, neuromuscular monitoring (NMM) is necessary to confirm adequate recovery before tracheal extubation.¹⁻¹⁴

3.4.

Both the American Society of Anesthesiologists (ASA) and the European Society of Anaesthesiology and Intensive Care (ESAIC) recommend the routine use of qNMM to reduce residual paralysis and improve patient outcomes.¹⁵⁻²¹

3.5.

The Confederation of ASEAN Societies of Anaesthesiologists (CASA) Presidents' Round Table Meeting on 4th March 2024 issued a joint statement on the use of NMM, calling for the use of qNMM in clinical practice as a step towards improving patient safety outcomes.²²



Statement

The Malaysian Society of Anaesthesiologists (MSA) and the College of Anaesthesiologists (CoA), Academy of Medicine of Malaysia, recommend the following standards for neuromuscular blockade management:

4.1. Availability and use of qNMM

4.1.1. qNMM must be available for patients in whom NMBAs are administered.

4.1.2. Current evidence supports the use of qNMM over qualitative NMM to avoid rNMB.

4.2. Monitoring Standard

4.2.1. When using qNMM, confirmation of a train-of-four (TOF) ratio ≥ 0.9 , measured at the adductor pollicis muscle, is strongly recommended prior to tracheal extubation in patients who received non-depolarizing NMBAs.

4.3. Anaesthesia healthcare professionals' responsibility

4.3.1. Anaesthesia healthcare professionals play crucial roles in reducing NMB related post-operative complications and adverse patient outcomes by ensuring adequate reversal of NMB.

4.4. Institutional responsibility

4.4.1. Anaesthesiology Departments must implement effective strategies to incorporate qNMM into clinical practice and transition to evidence-based management of NMB.

4.4.2. Recommended strategies are:

4.4.2.1. Ensuring qNMM devices are available in care areas where NMBAs are administered to patients.

4.4.2.2. Education and training for all anaesthesia healthcare professionals.

4.4.2.3. Quality assurance through audits and incorporation into departmental performance metrics.



References

The statement is based on extensive evidence from peer-reviewed literature and current international guidelines. For a full reference list, see Appendix A.

Appendix A

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