Malignant hyperthermia: still an issue for neuromuscular diseases?

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Abstract

PURPOSE OF REVIEW: We will give an overview of neuromuscular disorders that can be linked with malignant hyperthermia or malignant hyperthermia-like reactions, and suggest an appropriate approach to interpret the risks.

RECENT FINDINGS: An increasing number of neuromuscular phenotypes have been linked to malignant hyperthermia susceptibility (MHS). This is for an important part due to the highly variable phenotype associated with mutations in the ryanodine receptor 1 gene (RYR1), the gene most frequently associated with MHS. A RYR1-mutation or a clinical RYR1-phenotype does not automatically translate in MHS, but precautions should be taken nonetheless. In addition, several other genes and phenotypes are now considered to be associated with MHS. In contrast, several neuromuscular diseases that were long thought to be linked to MHS are now known to cause malignant hyperthermia-like reactions instead of malignant hyperthermia. This is highly relevant as not only the given preoperative advice differs, but also acute treatment.

SUMMARY: This review provides a summary of current evidence linking certain neuromuscular diseases to malignant hyperthermia or malignant hyperthermia-like reactions. We provide a guide for the clinician, to determine which patients are at risk of malignant hyperthermia or malignant hyperthermia-like reactions perioperatively, and to ensure adequate treatment in case such a severe acute complication occurs.

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