Malignant Hyperthermia Crisis: Optimizing Patient Outcomes Through Simulation and Interdisciplinary Collaboration

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Purpose/Goal

To provide the learner with knowledge specific to improving response to malignant hyperthermia (MH) crises.

Objectives

1. Describe MH.
2. Identify causes of MH.
3. Discuss treatment options for MH.
4. Discuss the use of high-fidelity simulation for MH training.
5. Explain how the quality improvement (QI) project presented in this article focused on improved response to an MH crisis.

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Conflict of Interest Disclosures

Ms Cain, Dr Riess, Ms Gettrust, and Dr Novalija have no declared affiliations that could be perceived as posing potential conflicts of interest in the publication of this article.

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ABSTRACT

Malignant hyperthermia (MH) is a rare, life-threatening event. Many clinicians are unprepared to manage an MH crisis in the perioperative setting because it requires the use of low-frequency, high-risk skills and procedures. Simulation is a recognized educational method for cumulative and integrative learning in a safe environment that resembles real-life clinical scenarios. The aim of this quality improvement project was to provide simulation-based learning to perioperative personnel to educate them in the early recognition, treatment, and management of MH. An interdisciplinary team developed an MH education plan. Implementation of the plan involved a two-part training: an educational session, and a role-playing scenario using high-fidelity OR simulation. Simulation teaching provided OR personnel with an opportunity for skill development, teamwork, interdisciplinary communication, and problem solving. Personnel responded favorably and identified positive outcomes, such as role clarity, improved anticipatory response, and overall team cohesion. In addition, the project included updating the MH cart and writing the hospital's MH policy. *AORN J* 99 (February 2014) 301-308. © AORN, Inc, 2014. http://dx.doi.org/10.1016/j.aorn.2013.06.012

Key words: *malignant hyperthermia, MH, high-fidelity simulation, interdisciplinary collaboration, MH crisis, interprofessional.*

Malignant hyperthermia (MH) is a pharmacogenetic disease process that occurs when predisposed individuals are exposed to volatile anesthetics or succinylcholine. It is a medical emergency, with most episodes occurring shortly after induction of general anesthesia or during the intraoperative period.[1] The one-hour period immediately after surgery is also a critical time.[2] Although rare, MH has been known to occur while the patient is recovering in the postanesthesia care unit (PACU) or in any location (eg, emergency department, dental surgery

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