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Eric Reing
Otterbein University, eric.reing@otterbein.edu

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Malignant Hyperthermia: A Clinical Crisis
Eric Reing, ,BSN-RN, CCRN
Otterbein University, Westerville, Ohio

Introduction
Malignant hyperthermia, though uncommon, is a serious and life-threatening condition. Malignant hyperthermia is an autosomal dominant disorder that affects skeletal muscle. It can be caused by various general anesthetic agents like succinylcholine and several inhaled anesthetics. Malignant hyperthermia is a relevant topic to the perioperative nurse as this disorder can lead to better outcomes and prevent catastrophic events. With early recognition, diagnosis, and treatment with dantrolene sodium, the mortality rate of malignant hyperthermia decreased from 80% in the 1970s to less than 5% by 2007 (Dirksen, 2013).

Signs and Symptoms
Malignant hyperthermia has a wide range of manifestations in a patient. It can be very acute with sudden and apparent muscle rigidity post anesthetic or the very acute with sudden and apparent muscle rigidity. Signs and symptoms of malignant hyperthermia directly affect nursing care. It is important to understand what population makes up high risk patients. A practitioner, with a good preoperative history, can ascertain if a person is at high risk. Any person with a family history of anesthetic reaction or malignant hyperthermia should be red flagged and suspected of possibly suffering from malignant hyperthermia with anesthesia. Also, the practitioner knows that the highest rate of malignant hyperthermia occurs amongst younger people with an average age of 18. A practitioner should also know to correctly diagnose and know the steps to handle a malignant hyperthermia crisis. The Malignant Hyperthermia Association of the United States recommends that information on how to handle a crisis be posted in all surgical rooms. The steps include to discontinue anesthetics if possible, hyperventilate the patient, correct electrolytes and blood gases, and correct the rigidity of the muscles (Brislin, 2013). 

Pathophysiologic Process
The understanding of the pathophysiology and signs and symptoms of malignant hyperthermia directly affects nursing care. It is important to understand what population makes up high risk patients. A practitioner, with a good preoperative history, can ascertain if a person is at high risk. Any person with a family history of anesthetic reaction or malignant hyperthermia should be red flagged and suspected of possibly suffering from malignant hyperthermia with anesthesia. Also, the practitioner knows that the highest rate of malignant hyperthermia occurs amongst younger people with an average age of 18. A practitioner should also know to correctly diagnose and know the steps to handle a malignant hyperthermia crisis. The Malignant Hyperthermia Association of the United States recommends that information on how to handle a crisis be posted in all surgical rooms. The steps include to discontinue anesthetics if possible, hyperventilate the patient, correct electrolytes and blood gases, and correct the rigidity of the muscles (Brislin, 2013).

Significance of Pathophysiology
Malignant hyperthermia is a rare disorder and can often have devastating effects. It is often a difficult disease to diagnose due to other diseases with similar symptoms and the fact that malignant hyperthermia can happen at different times during the procedure. Understanding pathophysiology of this disorder can lead to better outcomes and prevent catastrophic events. With early recognition, diagnosis, and treatment with dantrolene sodium the mortality rate of malignant hyperthermia decreased from 80% in the 1970s to less than 5% by 2007 (Dirksen, 2013).

Implications on Nursing Care
Malignant hyperthermia is a genetically acquired disease that can cause death if not diagnosed and treated early enough. It's detrimental effects depend greatly on the practitioner's knowledge and understanding of the pathophysiologic process and the signs and symptoms that manifest with malignant hyperthermia. Once diagnosis is determined treatment should be given immediately to best prevent illness outcomes brought on by malignant hyperthermia.

Additional Sources

Conclusion
Malignant hyperthermia is a genetically acquired disease that can cause death if not diagnosed and treated early enough. It’s detrimental effects depend greatly on the practitioners knowledge and understanding of the pathophysiologic process and the signs and symptoms that manifest with malignant hyperthermia. Once diagnosis is determined treatment should be given immediately to best prevent illness outcomes brought on by malignant hyperthermia.

References