

[NM-158] Development of an Anesthetic Protocol for Patients with Known or Suspected Mitochondrial Disorders: A Quality Improvement Initiative

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INTRODUCTION

Mitochondrial disorders (MD) comprise a genetically and phenotypically diverse set of diseases and result from dysfunction of the mitochondria, the energy producers of the cell. These disorders occur with an incidence of 1:4000 [1]. Often, patients with MD are in need of anesthesia for a variety of procedures, such as MRI, lumbar puncture, and muscle biopsy. These patients have unique anesthetic considerations that must be taken into account when formulating an anesthetic plan [2]. Currently at our institution, there is no anesthetic protocol for patients with MD. Therefore, the purpose of this quality improvement initiative is to review the current process for caring for these patients in the perioperative period and to develop a protocol to standardize care. Thus, we can possibly reduce the risk for anesthetic complications.

METHODS

This is a quality improvement initiative performed at a free-standing tertiary children's hospital that is seeing an increase in referrals of MD patients. First, our institution's current process to evaluate and care for patients with MD has been identified. Second, a standardized protocol is being developed based on a literature review of current recommendations for care of this patient population during the perioperative period.

INITIATIVE

Our institution has lacked a standardized method of anesthetic care for patients with MD. Our new system will impact all phases of the perioperative period. Preoperatively, we will improve communication between the referring physician, geneticist, and the anesthesiologist. Additionally, patients will be seen preoperatively by an anesthesiologist. These two preoperative steps will ensure that a thorough preoperative evaluation has been completed and will allow for advanced planning on the part of the anesthesiologist. Next, our protocol outlines pertinent anesthetic considerations for the intraoperative period. This list of considerations aids the anesthesiologist in the safe care of patients with MD. In this way, the anesthesiologist will be able to develop a safe, comprehensive anesthetic plan for MD patients, especially when the anesthesiologist may not have often encountered patients with MD in her career. Finally, our procedure will outline recommendations for the postoperative period for physicians and nurses.

DISCUSSION

By developing an evidence-based anesthetic protocol for patients with MD, our institution can more confidently provide safe, effective care for this patient population. This protocol will ensure that our anesthetic providers are following the best practices identified in literature. Additionally, we will have a more effective system to identify critical issues prior to the day of surgery. Through the enactment of this system, we will improve communications between the anesthesiologist and the primary care physicians, ease the concerns of nervous parents as their children undergo anesthesia, and ultimately provide these patients with the highest current standard of care.

REFERENCES

- [1] Driessen, J. *Curr Opin Anesthesio.* 21 (2008): 350-355.
 - [2] Niezgoda, J, et al. *Pediatr Anesth.* 23 (2013): 785-93.
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