Integrating Pupillometry into a Cardiovascular ICU

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Background/Significance

- Neurologic assessment, including pupillary assessment, is a standard of care.
- Accurate assessment is essential to rapidly detect neurologic deterioration.
- Manual pupil assessment is unreliable because of subjectivity.
- Pupillometry standardizes this crucial assessment.

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Review of Literature

- Literature supports the accuracy of pupillometry.
- Pupillometry is superior to manual pupillary assessment.
- Literature supports the use of pupillometry in patients who have/are at risk for hypoxic-ischemic brain injury.

Project Purpose

To integrate pupillometry into a CVICU to assist with neurologic assessment and detection of neurologic complications. Doing this has been shown to improve the accuracy of neurologic assessments and to potentially improve patient outcomes.

Methods

- Patient population/Setting: Mechanical Circulatory Support Device (MCSD) Patients in a CVICU
- Staff training: Computer based training, charge nurse in-person training, huddle discussions, staff meeting presentations
- Orders: Every 4 hours pupillometry; reporting parameters

Results

- 16 patients required MCSD
- Median length of stay: 25.5 days
- Median length of device use: 3.5 days
- Neurologic complications: 2
- Mortalities: 4
- Anticoagulation used: 12
- Nursing Compliance: 75%
- Provider notification/intervention documented: 15%

Discussion

- Sustaining pupillometry will require understanding the barriers to performing pupillometry, documenting the results, communicating the abnormal results, and documenting the communication and intervention completed.
- Workflow and improvement in documentation need to be considered.
- This project demonstrates that it is feasible to routinely use pupillometry on MCSD patients.