Decreasing Postop Delirium with Dexmedetomidine vs Propofol

Abigail Banko, RN, BSN, SRNA, Isabel Bannister, RN, BSN, SRNA, Caitlan Bradford, RN, BSN, SRNA, Reid Blaylock, RN, BSN, SRNA & Abby Patrick, RN, BSN, SRNA
Faculty Advisor: Dr. Tracy McClinton, DNP, APRN, AGACNP-BC, EPB-C
College of Nursing - The University of Tennessee Health Science Center - Memphis, TN

THE UNIVERSITY OF TENNESSEE HEALTH SCIENCE CENTER
COLLEGE OF NURSING

Purpose

- The purpose of this DNP project is to determine the effects of dexmedetomidine versus propofol in the adult surgical population perioperatively on postoperative delirium (POD)

Specific Aims

- To compare propofol versus dexmedetomidine related to delirium incidence in postoperative patients
- Determine dexmedetomidine's impact on additional postoperative outcomes such as intensive care unit length of stay, hospital length of stay (HLOS), mechanical ventilation time, and complication rates

Background

- Propofol has been a mainstay of treatment for anesthesia providers
- Anesthetic agents have different mechanisms of action; some of which are associated with POD
- POD is an acute brain illness that involves changes in consciousness, attention, cognition, and perception
- Up to 80% of critically ill patients will develop POD
- Despite the symptoms being transient, POD may prolong hospital length of stay, increase the risk of postoperative complications, and impair functional recovery
- In recent years, the use of dexmedetomidine has increased due to research claiming a reduction in complications, which includes POD

Methods

Study Design

- Scoping Review
- A systematic search was conducted using the University of Tennessee Health Science Center Library databases including, PubMed, OVID, CINAHL, and Cochrane databases
- Inclusion criteria included the choice of general anesthetic (propofol or dexmedetomidine), delirium screening with CAM, CAM-ICU, or MMSE, publication in English, and at least 18 years old
- Exclusion Criteria: baseline neurological deficit, younger than 18 years old, did not receive dexmedetomidine or propofol
- Search terms included "post-operative", "dexmedetomidine", "propofol", "delirium", "anesthesia", "confusion" and "surgery"
- Ten articles were selected by virtue of their high quality and level of evidence

Setting

- The perioperative period in a hospital setting

Study Duration

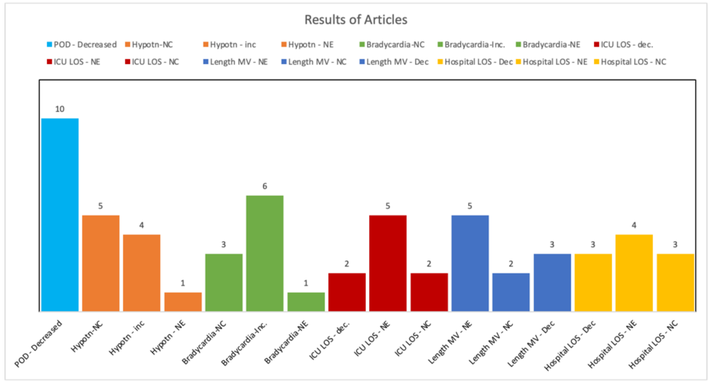
- September 22, 2022- May 2023

Study Population

- Hospitalized surgical patients over 18 years old with no prior neurological deficits

IRB

- UTHSC Institutional Review Board has deemed the project as exempt



Results

- Post-op delirium was decreased while using dexmedetomidine versus propofol
- The length of MV was decreased in 4 articles with dexmedetomidine versus propofol
- The length of ICU and hospital stay was decreased in three articles
- Adverse effects: Hypotension was noted in 4 articles, no change in five articles, and not examined in one; Bradycardia was noted in six articles, no change in three, and not examined in one

Implications for Practice

- The evidence of this review concludes dexmedetomidine is superior in reducing POD
- There are additional benefits of decreasing ICU admission, MV time, and hospitalization length
- Education on these findings should be provided to anesthesia providers so they can incorporate the results into their practice
- Further studies should be performed to identify the efficacy of dexmedetomidine to reduce postoperative delirium

References

References