**Student Paper Abstracts**

**Is Cerebral Oximetry a Useful Monitor for Evaluating Cerebral Perfusion in the Beach Chair Position During Shoulder Arthroscopy?**

Angela M. Bilansky, SRNA and Lindsey M. Knapp, SRNA

The physiological changes due to positioning during shoulder arthroscopy in the beach chair position (BCP) are exaggerated by general anesthesia which increases the risk for decreased cerebral perfusion. The implementation of noninvasive monitoring of cerebral oxygenation during anesthesia in BCP using near-infrared spectroscopy, a technology similar to pulse oximetry, has potential benefits. The purpose of this paper is to evaluate if cerebral oximetry is a useful monitor in evaluating cerebral perfusion during shoulder arthroscopy in the BCP. A literature review and a comparison of research findings were conducted on nine articles analyzing cerebral tissue oxygen saturation, mean arterial pressure, position change, anesthetic technique, and postoperative neurological deficits. An analysis of current research indicates that cerebral tissue oxygen saturation (Scto2) and mean arterial pressure (MAP) values correlate. The appropriate treatment of hypotension subsequently treats cerebral desaturation. Therefore, current literature suggests the use of cerebral oximetry monitoring on patients undergoing shoulder arthroscopy in the BCP is not necessary.

**Guidelines for Neuraxial Blockade in Patients Receiving Dabigatran or Rivaroxaban**

Chandeli Ramos, SRNA and Cecilia Arcinas, SRNA

Dabigatran and rivaroxaban are new oral anticoagulants marketed as alternatives to warfarin. Both have been approved for thromboprophylaxis in patients with nonvalvular atrial fibrillation. Rivaroxaban has also been approved for thromboprophylaxis in patients undergoing hip and knee arthroplasty. A systematic review was conducted to determine the recommendations for patients receiving dabigatran or rivaroxaban undergoing neuraxial anesthesia. Patients receiving dabigatran should stop therapy 34-36 hours before administration of neuraxial anesthesia or epidural catheter manipulation. Patients may restart dabigatran therapy 6 to 12 hours after receiving spinal anesthesia or the removal of an epidural catheter. Patients receiving rivaroxaban should stop therapy 12 to 26 hours prior to administration or neuraxial anesthesia or placement of an epidural catheter. These patients may restart rivaroxaban therapy 4 to 6 hours after receiving spinal anesthesia or the removal of an epidural catheter. These recommendations are theoretical because they are based on the pharmacokinetics of each drug. Thus, anesthesia providers are encouraged to make decisions regarding neuraxial anesthesia techniques based on careful assessment of each patient.

**Upcoming Events:**

- January 7, 2013
  - Spring Semester Begins
- April 1, Deadline for Applications, Class of 2016
- April 6-9, Easter Break, Campus Closed
- April 19, Spring Semester Ends
- May 3 and 4, Class of 2014 New Student Orientation
- May 18, Student Seminar
ABSTRACTS for the Upcoming Student Seminar: Saturday May 18, 2013

The Effective Use of General, Combined Spinal-Epidural, and Spinal Anesthesia in the Management of Peripartum Cardiomyopathy
Jeremy A. Heinonen, SRNA and Jonathan N. Roth, SRNA

Peripartum cardiomyopathy (PPCM) is a severe form of heart failure experience in either the late months of pregnancy or the early postpartum period. The worldwide incidence of PPCM varies widely and is thought to occur in between 1 in 3000 to 1 in 15,000 parturients. Although the cause of PPCM is unknown, many risk factors and multiple etiologies are suspected of playing a role in the development of PPCM. Diagnosis is often delayed or missed altogether because signs and symptoms of late pregnancy mask early signs and symptoms of PPCM. A search of the literature was conducted to evaluate the efficacy of different anesthetic management techniques utilized in this complicated patient population. An examination of systematic reviews and case reports showed that general anesthesia, combined spinal-epidural, and spinal anesthesia have all safely been used in the management of PPCM. Further research should focus on examining each of the three anesthetic techniques, the advantages and disadvantages of each, and their overall safety to determine if any one anesthetic method is superior in treating this complex patient population.

Effect of Neuraxial Anesthesia and Analgesia on Uterine, Umbilical, and Fetal Arterial Blood Flows
Alex Kessler, SRNA and Trena Mallory, SRNA

Most obstetric anesthesia practice is based on the principle that maternal hypotension experienced during neuraxial blockade results in diminished blood flow to the fetus. Emerging research examining Doppler flow indices from uterine, placental, and fetal circulations now refutes these long-standing beliefs. A literature review was performed using PubMed, EBSCO Host, and Google Scholar databases and 19 articles examining the effect neuraxial blocks have on utero- and fetoplacental circulation were selected. Regardless of the dosing of local anesthetic and opioid, neuraxial anesthesia/analgesia-induced reductions in uterine artery blood flow did not significantly (p<0.05) reduce fetoplacental perfusion. Administration of intrapartum neuraxial anesthesia and analgesia does not have the same effect on blood flow indices obtained from the uterine, umbilical, and middle cerebral arteries. Neither the neuraxial blockade nor the resultant hypotension impacts fetal circulation as drastically as previously hypothesized. Aggressive treatment of maternal hypotension with vasopressors may subsequently contribute to fetal acidemia. The lack of maternal-fetal circulatory interdependence may guide amendments to hypotension treatment protocols and set a new standard of permissible hypotension not requiring vasopressor intervention.

Use of Recombinant Activated Factor VII in High Blood Loss Surgeries
Tsering Sangmo, SRNA and Juvelyn R. Pintor, SRNA

The use of recombinant activated coagulation factor VII (rFVIIa) has been extended from hemophilia A to non-hemophilic patients anticipated to be at risk of major bleeding or uncontrolled bleeding. This paper provides an overview of the off-label use of rFVIIa during high blood loss surgeries. This was a literature review using PubMed, MeSH, ScienceDirect, and Google Scholar databases to search for studies on the effect of rFVIIa in high blood loss surgeries. Four studies found a statistically significant reduction in blood loss during high blood loss surgeries with rFVIIa use. One study did not find a reduction in blood loss with rFVIIa use. Three studies showed a reduction in red blood cell transfusion requirements and two did not. Recombinant activated factor VII might be useful for the management of surgical bleeding during high blood loss surgeries. The studies selected were predominantly small and nonrandomized samples, which makes it difficult to draw firm conclusions or generalize the findings to a wider use. More randomized controlled studies are necessary.
Medical Management for Hypotension in Patients on Angiotensin Converting Enzyme Inhibitor and Angiotensin Receptor Antagonist Therapy Undergoing General Anesthesia
Angela N. Tripp, SRNA and Melinda Stone, SRNA

Is a Preoperative 12-Lead Electrocardiogram Effective in Predicting Major Adverse Cardiac Events in Older Patients Without Cardiac History Undergoing Low-Risk Surgery?
Michael J. Lee, SRNA and Hilary J. Riggin, SRNA

Respiratory Management of One-Lung Ventilation During Thoracic Surgery: Effectiveness of Positive End-Expiratory Pressure
Brett R. Lindsay, SRNA and Keith E. Furzland, SRNA

Which Muscle, the Orbicularis Oculi, Corrugator Supercilii, or Adductor Pollicis, Best Assesses Optimal Intubating Conditions, Maintenance of Anesthesia, and Skeletal Muscle Recovery?
Jennifer R. Kempen, SRNA and Marissa Myhre, SRNA

Perioperative Ketamine Administration to Reduce Postoperative Opioid Consumption and Visual Analog Pain Scores in the Opioid-Dependent Patient
Brittani N. Engen, SRNA and David Truscinski, SRNA

Is Cerebral Oximetry a Useful Monitor for Evaluating Cerebral Perfusion in the Beach Chair Position During Shoulder Arthroscopy?
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Effect of Neuraxial Anesthesia and Analgesia on Uterine, Umbilical, and Fetal Arterial Blood Flows
Alex Kessler, SRNA and Trena Mallory, SRNA

A Comparison of Tracheal Intubation With and Without Neuromuscular Blocking Agents
Laura B. Swenson, SRNA and Kristina A. Kase, SRNA

Does Isoflurane Affect Cognitive Dysfunction in the Elderly?
LaTasha M. Mohr, SRNA and Joseph M. Ng, SRNA

Intravenous Lidocaine and the Reduction of Intraoperative and Postoperative Opioid Use in Intraperitoneal Surgery
Kristi Neilson, SRNA and Laura Solverud, SRNA

The Effects of Environment Tobacco Smoke on the Pediatric Patient Undergoing General Anesthesia
Brandon J. Randall, SRNA and Andrea L. Overgaard, SRNA

Guidelines for Neuraxial Blockade in Patients Receiving Dabigatran or Rivaroxaban
Chandeli Ramos, SRNA and Cecilia Arcinas, SRNA

Postoperative Vision Loss as a Complication of Steep Trendelenburg Positioning
Andrea J. Silvola, SRNA and Brook D. Newell, SRNA

Use of Recombinant Activated Factor VII in High Blood Loss Surgeries
Tsering Sangmo, SRNA and Juvelyn R. Pintor, SRNA

Saturday, May 18, 2013
0800 – 1600

Twin Cities Campus
*University Center-New Location
2540 Park Avenue
Minneapolis, MN  55404

Cost $55.00 – CRNA’s
$30.00 – Students

Application for 5 CEU credits is in process

Continental Breakfast, Coffee, Tea, Soft Drinks and Lunch provided
Abstracts

Intravenous Lidocaine and the Reduction of Intraoperative and Postoperative Opioid Use in Intraperitoneal Surgery
Kristi Neilson, SRNA and Laura Solverud, SRNA

Lidocaine is an amide-type local anesthetic that acts by decreasing the inflammatory response produced from surgical tissue trauma. Postoperative pain leads to an increase in opioid consumption, which leads to adverse effects such as respiratory depression, postoperative nausea and vomiting, and sedation. Using alternative methods, such as an intravenous lidocaine infusion, will help decrease those adverse effects and increase patient satisfaction. The purpose of this review was to evaluate the effects of a lidocaine infusion on intraoperative and postoperative opiate use and postoperative pain scores in the patient undergoing an intraperitoneal surgical procedure. A literature search was conducted using PubMed, Academic Search Premier, and Google Scholar. The inclusion criteria were primary sources, randomized controlled trials, and studies that did not include animals. The results indicated that lidocaine infusion did significantly decrease intraoperative and postoperative pain scores. Some limitations of the data were small sample sizes, the addition of supplementary medications, and variations in duration of the lidocaine infusion. In order to demonstrate the efficacy of intravenous lidocaine in the general population further large-scale studies must be conducted.

Respiratory Management of One-Lung Ventilation During Thoracic Surgery: Effectiveness of Positive End-Expiratory Pressure
Brett R. Lindsay, SRNA and Keith E. Furzland, SRNA

One-lung ventilation (OLV) is a conventional practice for respiratory management during thoracic procedures. The use of positive end-expiratory pressure (PEEP) to effectively increase oxygenation remains controversial and concise data regarding the use of PEEP for OLV is needed. PubMed, Academic Search Premier, EBSCOHost, and Sage were searched for peer-reviewed randomized controlled trials, reviews, and meta-analyses published in English, within 10 years, and with full text accessibility. Ten articles met the inclusion criteria. Three articles reported an increase in PaO2/FiO2 ratio when PEEP was used. Three articles reported oxygenation (PaO2) as impaired or unimproved, while 1 article found an increase in oxygenation with administration of PEEP. Four articles addressed the effects of PEEP on hemodynamics. Two articles reported a decrease in hemodynamic measures while 2 articles reported unchanged hemodynamics with administration of PEEP. Recommendations of studies differ in the management of oxygenation during OLV. A study that addresses the independent value of PEEP on oxygenation in thoracic surgical patients undergoing OLV will enable anesthesia providers to make an informed decision concerning their respiratory management, prevention, and treatment of hypoxia.

Medical Management for Hypotension in Patients on Angiotensin Converting Enzyme Inhibitor and Angiotensin Receptor Antagonist Therapy Undergoing General Anesthesia
Angela N. Tripp, SRNA and Melinda Stone, SRNA

The purpose of this literature review was to identify a management strategy for postinduction hypotension in patients chronically treated with an angiotensin converting inhibitor (ACEI) or angiotensin II receptor antagonist (ARA). A PubMed and Google Scholar database search was performed. Eleven journal articles evaluating anesthesia-induced hypotension and its management in patients on ACEI or ARA medication were reviewed. Treatments that resulted in return to normotension were identified and compared. Telipressin and norepinephrine were found to be useful in treatment of refractory hypotension in patients on chronic ACEI or ARA therapies when phenylephrine and ephedrine were not effective. Patients on ACEI or ARA therapy have a resultant blockade of the renin-angiotensin and the arginine-vasopressin systems. Postinduction hypotension may occur. This review of the literature found that norepinephrine and terlipressin may be effective adjuncts to phenylephrine and ephedrine in treating refractory hypotension in these patients.
Does Isoflurane Affect Cognitive Dysfunction in the Elderly?
LaTasha M. Mohr, SRNA and Joseph M. Ng, SRNA

Isoflurane has been known to be the neuroprotective inhalation agent of choice for patients with decreased intracranial compliance and global ischemia. Recent studies have shown a correlation between postoperative cognitive deficits and the use of volatile agents, such as isoflurane, in the elderly. Therefore, the purpose of this paper is to determine if isoflurane affects cognitive dysfunction in the elderly. In a literature review of 23 research articles, the outcomes evaluated were the effects of isoflurane on spatial memory, cognitive dysfunction, and cellular changes. There were five studies analyzing isoflurane and spatial learning demonstrating that exposure to isoflurane greater than one MAC and a time span of greater than two hours impairs spatial learning. Three studies found that the elderly exposed to isoflurane are at an increased risk of having postoperative cognitive dysfunction. Six studies demonstrated that animal neurons exposed to isoflurane at 1 MAC or greater for at least three hours had increased cellular changes that correlated with apoptosis. Based on the studies reviewed, it is recommended to limit the exposure of isoflurane to no greater than one MAC for less than three hours in the elderly.

Is a Preoperative 12-Lead Electrocardiogram Effective in Predicting Major Adverse Cardiac Events in Older Patients Without Cardiac History Undergoing Low-Risk Surgery?
Michael J. Lee, SRNA and Hilary J. Riggin, SRNA

A preoperative electrocardiogram (ECG) is frequently done on surgical patients over a certain age established by individual facilities although the value of an ECG for low-risk surgery without the presence of other cardiac risk factors is not clear. The two most common surgical cardiac risk assessments do not include advanced age as a risk factor for major adverse cardiac events (MACE). This synthesis paper addresses findings from a query of databases EBSCO, PubMed, Cochrane Library, and Google Scholar which yielded eight cohort studies and one task force guideline. Three studies associated advanced age with increased incidence of MACE, three found no correlation, and two found a statistically significant correlation although their study results were subsequently adjusted to exclude advanced age. Of the studies that found a positive correlation between age and increased MACE, one found age 65 years and older, and two found age 70 years and older to be risk factors. Preoperative ECGs on older patients are supported by the majority of the reviewed studies. Clinicians are supported by the correlations found in these studies to obtain preoperative ECGs on patients age 65 years or greater before low-risk surgery.

The Effects of Environment Tobacco Smoke on the Pediatric Patient Undergoing General Anesthesia
Brandon J. Randall, SRNA and Andrea L. Overgaard, SRNA

The purpose of this article is to review and evaluate current literature regarding the effects of environmental tobacco smoke exposure (ETS) in the pediatric patient undergoing general anesthesia. PubMed, PubMed Central, and Google Scholar searches were conducted to identify studies addressing the effects of ETS in pediatric patients receiving general anesthesia. The literature was examined to determine if the existence and severity of ETS exposure affected the outcomes of patients during the perioperative period. This review indicates that ETS is linked to decreased PFTs and an increased incidence of cough, hypersecretion, breath holding, stridor, wheezing, bronchospasm, laryngospasm, obstruction, and desaturation. Based on the literature review, knowing the presence and severity of ETS exposure is helpful in anticipating respiratory complications. This review showed a correlation between the amount of ETS exposure and the increased likelihood of respiratory complications. More studies that include a system to evaluate the risk of respiratory complications, depending on the severity of ETS exposure, are necessary to assist anesthesia providers in being better prepared for this specific population.
SAIN T MARY’S UNIVERSITY UNVEILS ‘STRATEGIC PLAN 2017’ TO GUIDE UNIVERSITY INTO SECOND CENTURY

In 2012 Saint Mary’s University, under the direction of President Brother William Mann, conducted a year-long comprehensive strategic planning process. The significant endeavor involved 900 persons from the university’s network of stakeholders in a focused, five-phased planning process. The result, Strategic Plan 2017, was recently approved by the Board of Trustees. The plan is a complete articulation of a new vision for Saint Mary’s as a top-tier, national university.

With the adoption of Strategic Plan 2017 during its Centennial year, Saint Mary’s University of Minnesota is charting a course for the future by strategically aligning the university’s operations with its mission and vision. The plan outlines three themes which will serve to guide the work of the university: 1) strengthen and preserve the core mission and identity; 2) innovate and grow – three centers of excellence; and 3) steward and strengthen resources.

Over the next five years Saint Mary’s will undertake new initiatives and new thinking with a distinctive commitment to teaching and learning, ethical leadership, the sciences, and online education. “Strategic Plan 2017 is the next step in a process to launch the university’s second century, building on the significant success of its first century,” said Brother William. “This plan was the outcome of the thoughts and aspirations of our extended Saint Mary’s community. Under the goals set forth in Strategic Plan 2017 we will collaboratively ensure a vibrant, successful and meaningful future for Saint Mary’s.”

To read the plan in its entirety, go to www.smumn.edu/strategicplan

CELEBRATE
National Nurse Anesthetists Week
January 20–26, 2013

This Semester’s Courses

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Class of 2014 Demographics

Thirty-two students are starting the anesthesia program in May of 2012. Of the 32, 38% are female and 62% are male. The overall science/math grade point average is 3.2 on a 4.0 scale. They all have at least 2 years of ICU experience. These 32 were chosen from a pool of 178 who applied. These students are coming from all over the USA. Home states include MN, WI, AZ, OH, NM, KS, NE, GA, ND, CO, OR, IN, and WA.

Orientation for the new class will take place on May 2nd and 3rd. A reception for the new class and their families will take place at 3:00 PM on Friday May 3rd.

Program Staff

Merri Moody (612) 728-5133
Program Director

Carol Hunter (612) 238-4544
Assistant Director

Mary Skelley (612) 728-5151
Clinical Director

Amy Swartz (612) 238-4530
Faculty

Veronica Murphy (612) 728-5132
Administrative Assistant
**TRANSCRIPTS**
To get your transcript please send a request to the Assistant Registrar of the Twin Cities Campus. Please include your name, student ID number, the years of attendance, the number of transcripts needed, where you want them sent, and your signature. We do not have copies of diplomas.

Assistant Registrar  
Saint Mary’s University of MN  
2500 Park Avenue  
Minneapolis, MN 55404-4403

**VERIFICATION OF EDUCATION FOR EMPLOYERS**  
In accordance with federal regulation, the student/alumni must give permission for any information to be released by the University. Verifications cannot be done over the phone. Please sign a consent form from your employer or send a request with your signature to:

Assistant Registrar  
Saint Mary’s University of MN  
2500 Park Avenue  
Minneapolis, MN 55404-4403  
FAX: (612) 728-5121

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**STUDENT SEMINAR RESERVATION FORM**

| NAME: |  
| ADDRESS: |  
| CITY / STATE / ZIP: |  
| AANA NUMBER: |  

**PLEASE MAKE CHECK OUT TO:**  
**GNA GRANT ACCOUNT 5309**

Cost $55.00 – CRNA’s  
$30.00 – Students  
Application for 5 CE credits is in process

Please send application and registration fee to:

Saint Mary’s University of Minnesota  
Nurse Anesthesia Program  
2500 Park Avenue  
Minneapolis, MN  55404  
ATTN: Veronica Murphy

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There have been 707 GRADUATES from 1953 through 2012

Website Address  
[www.smumn.edu/anesthesia](http://www.smumn.edu/anesthesia)  

Saint Mary's University - Anesthesia
The graduating Class of 2012 completed the Nurse Anesthesia Program on August 17, 2012. We wish them all the best in their new careers.

Congratulations Class of 2012

Clinical Corner

The past year has been productive and exciting with continued growth in providing excellent clinical experiences for our students. We want to welcome our new clinical sites: Ministry St. Mary’s Hospital, Rhinelander, WI, Winona Health System, Winona, MN, St. Gabriel’s Hospital, Little Falls, MN, and Hayward Area Memorial Hospital, Hayward, WI.

We would also like to welcome our new clinical coordinators: Bret Brady: St. Mary’s Hospital, Duluth, Lisa Schaefer: St. Cloud Hospital, Tom Smart: Winona Health System, Chris Younker: Ministry St. Mary’s Hospital, Rhinelander, Keith Larson: Northfield Hospital, Andy Tracy: Mile Bluff Medical Center, Mauston, Ryan Diegel: Memorial Health Care, Medford, Justin Lindhart and Greg Anderson: St. Gabriel’s Hospital, Little Falls, Robert Terry: Hayward Area Memorial Hospital, Jeff Sliper: Riverwood Health Care Center, Aitkin, Laura Mickelson: Phillips Eye Institute and Danielle Patti: Children’s Health Care Minneapolis.

Thank you to all our clinical coordinators and clinical faculty for their ongoing support and dedication in providing exceptional clinical experiences for our students.

As we grow and expand the clinical experiences for our students, we continue to seek out additional clinical sites. Please contact Mary Skelley, Clinical Education Director at: mskelley@smumn.edu if you have any ideas or suggestions of organizations that may be interested in serving as one of our clinical sites.

Upcoming Events

- September 3, Labor Day
- September 4, Fall semester begins
- October 12-13, MANA Meeting
- November 7, Registration for Spring semester begins
- November 22 and 23, Thanksgiving Break
- December 14, last day of the semester
- December 24 to January 2, Campus Closed
- January 2, Spring semester begins
- May 18, 2012 Student Seminar
News

Senior Presentation Topics for the 2013 Student Seminar


Abstracts from these papers will begin to appear in the next newsletter along with registration information.

The Phillips West Neighborhood National Night Out was a Success!

Our dedicated volunteers did a fantastic job representing Saint Mary's at this fun neighborhood event. Big Red Cardinal was a hit and danced the night away with the Rene Salsa Dancers and local residents. We had many positive comments about SMU's presence in the neighborhood. This year over 2400 people attended the Phillips West Neighborhood National Night Out, a record number and has been deemed "a huge success, probably the best NNO ever!"

Saint Mary's was a proud sponsor of this event, along with over 30 neighborhood organizations and community partners.

The New SMU Central is Open.

We are happy to introduce SMU Central - your one stop for student services! SMU Central was designed to provide students one place to find information and access to services at Saint Mary’s University. Student services staff provide assistance on new student orientation, registration, financial aid, tuition and billing, international student services, university information, policies and commencement. SMU Central is located in LaSalle Hall on the Twin Cities Campus. Staff are available 9 a.m. – 6 p.m. Monday through Friday and can be reached by phone at (612) 238-4566, through e-mail at smucentral@smumn.edu or on the web at www.smumn.edu/smucentral.

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This Semester’s Courses

**FIRST YEAR STUDENTS**
- Anatomy and Physiology 1
- Principles of Anesthesia 1
- Pharmacology for Nurse Anesthetists

**SENIOR STUDENTS**
- Anatomy and Physiology II part 2
- Clinical Practicum 3
- Synthesis Paper
- Professional Aspects: Department Management

**Condolesces**
Rob Vonk (‘86) passed away on July 22nd. Rob was an outstanding student of Abbott Northwestern Hospital School of Anesthesia and Saint Mary’s College. He was a mentor to students and faculty alike. He will be remembered for his kind and gentle nature and his sense of professionalism. Our sincere condolences to his family and friends.

**ATTENTION ALUMNI**

**Faculty and Staff News**
The nurse anesthesia program welcomes Dr. Becky Katchmark, our new Anatomy and Physiology instructor. Dr. Katchmark will begin teaching during the Fall Semester.

Amy Swartz joins the Principles of Anesthesia faculty. She will office in LaSalle 100.

Merri Moody, Carol Hunter, and Mary Skelley have moved to new offices (Office numbers 98, 100 and 104) in LaSalle Hall.
There have been 708 graduates from this program since 1953.

Program Staff

Merri L. Moody (612) 728-5133
Program Director

Mary Skelley (612) 728-5151
Clinical Director

Carol Hunter (612) 238-4544
Assistant Director

Amy Swartz
Resident Faculty

Facebook Update
As of August 1, 2012, 188 students, faculty and alumni have joined the Saint Mary’s University Anesthesia Facebook Page. Please join us. The category of the group is Academic Group or Student Group.

Student Seminar May, 2012
Welcome Class of 2014

The Class of 2014 comes to us from Bloomington, Brooklyn Park, Champlin, Cottage Grove, Duluth, Forest Lake, Minneapolis, Rochester, Shakopee, St. Louis Park, and St. Paul, Minnesota; Green Bay, Marshfield, New Richmond, Oak Creek, and Wausau, Wisconsin; Taylorsville and Conyers, GA; Albuquerque, NM; Prescott, AZ; Cheyenne, WY; Fort Madison, IA; Galveston, TX; Las Vegas, NV; Long Beach, CA; Missoula, MT; Owings Mills, MD; Prospect Park, NJ; South Bend, IN; West Fargo, ND and Wichita, KS.

Please join us in welcoming the newest members of the anesthesia community.

Does Ketofol Offer an Alternative Approach to Sedation Regimens? A Review and Comparison of Ketamine-Propofol to Fentanyl-Propofol.

Brandon Allen SRNA and Myca Kleepsie SRNA

Ketofol is an emerging sedation regimen that combines agents propofol and ketamine (PK). It is postulated that this unique formulation provides a more stable hemodynamic and respiratory profile than the traditional propofol-fentanyl (PF) regimen. The purpose of this study is to research and identify data that supports propofol-ketamine as a safer and more beneficial sedation regimen as compared to PF.

Literature reviews and experimental studies were obtained through database searches to include Science Direct, PubMed, and Google Scholar. Our literature base consisted of 14 randomized, prospective studies and 3 reviews of the literature from the past 7 years.

There was no significant difference between the comparative groups with respect to age, weight, sex, duration of procedure, demographics, and dosage of medication. A general decrease in HR and RR was noted in PF groups and increased HR and RR in PK groups. Postprocedural complications were most often noted in the PK groups.
Anesthetic Implications for the Adult Patient with Pseudocholinesterase Deficiency.

Mark Retz SRNA and Rob Olson SRNA

Pseudocholinesterase deficiency is defined as an inherited or acquired variation in the metabolism of several common anesthetic drugs including succinylcholine, mivacurium, and ester-linked local anesthetics. This can result in a prolonged neuromuscular blockade and local anesthetic toxicity in susceptible individuals. This synthesis paper will discuss the anesthetic implications of pseudocholinesterase deficiency in the adult patient during the perioperative period.

A literature search was conducted using the EBSCO MegaFILE, PubMed, and Google Scholar databases. Human studies, published in English within the last 25 years were included in this review. All studies selected met the set inclusion criteria.

Preoperatively, it is important to review any tests used to identify pseudocholinesterase deficiency and also to recognize pre-existing conditions and medications that may decrease pseudocholinesterase levels or activity. Intraoperatively, the anesthesia provider must practice diligent neuromuscular monitoring, know how to identify patients who may be experiencing the effects of pseudocholinesterase deficiency, and understand which medications, can decrease pseudocholinesterase activity. Postoperatively, it is essential for anesthesia personnel to effectively treat adverse outcomes of pseudocholinesterase deficiency. This condition may be most noticeable in the postoperative period; however, all phases of the perioperative period must be explored so that an anesthetic plan of care can be formulated to minimize postoperative complications.

The Role of Intraoperative Glucose Control in Patients Undergoing Coronary Artery Bypass Graft Surgery.

Angela Guden SRNA and Rebecca Kohegyi SRNA

Intraoperative glucose control for cardiac surgical patients is a controversial issue among anesthesia providers. Hyperglycemia has been associated with an increase in morbidity and mortality in this patient population and includes increased incidence of death, stroke, deep sternal wound infection (DSWI), and increased length of stay (LOS). Both conventional and aggressive glucose control methods are used to decrease these adverse outcomes without consensus as to which method is more effective.

Google Scholar, EBSCO MegaFile, and PubMed databases were used to obtain retrospective, retrospective analysis of prospective data, literature reviews, non-randomized, and randomized controlled trial studies.

High glucose levels are an independent predictor of mortality for cardiac surgical patients (P<0.0001). Mortality can be decreased by 57% when glucose levels are kept below 150 mg/dL but increased when it falls below 140 mg/dL. LOS and DSWI were increased with glucose levels greater than 200 mg/dL. The occurrence of death and stroke were higher in the intensive control group.

After reviewing the literature, it remains inconclusive whether a conventional or an aggressive blood glucose treatment method decreases morbidity and mortality for cardiac surgical patients. Further research needs to be conducted that correlates outcomes with specific glucose ranges. The degree of glucose modification from the patient’s baseline should also be explored.
Anesthetic Implications for the Patient with Epidermolysis Bullosa.
Joseph Sanchez SRNA

Anesthetic Considerations for Patients with Moyamoya Disease.
Felix Karikari SRNA and Edna Kemboi SRNA.

Is Pain Perception Affected by Naturally Occurring Genetic Mutations of Melanocortin-1 Receptors?
Megan Ahrndt SRNA and McKensie Little SRNA

Does Ketofol Offer an Alternative Approach to Sedation Regimens? A Review and Comparison of Ketamine-Propofol to Fentanyl-Propofol.
Brandon Allen SRNA and Myca Kleepsie SRNA

Pulmonary Protective Ventilation Strategies Utilizing the Open Lung Concept and FiO2 Control During General Anesthesia in Patients Without Existing Pulmonary Disease.
Jesse D. Paulus SRNA and Eric J. Arndt SRNA

Anesthetic Implications for the Adult Patient with Pseudocholinesterase Deficiency.
Mark Retz SRNA and Rob Olson SRNA

Lindsay Klein SRNA and Amy Henderson SRNA

Time to Peak Effect of Propofol is Determined by Age and Weight in Pediatric Patients.
Tuyen Nguyen SRNA

The Role of Intraoperative Glucose Control in Patients Undergoing Coronary Artery Bypass Graft Surgery.
Angela Guden SRNA and Rebecca Kohegyi SRNA

Hearing Loss after Postdural Lumbar Neuraxial Anesthesia.
Thomas Boostrom SRNA and Clark Hendrickson SRNA

Preoperative Oral Clonidine for the Reduction of General Anesthesia.
Laura Nelson SRNA and Deborah Mickley SRNA

Rebecca Schermerhorn SRNA and Kate Menne SRNA

Learning Direct Laryngoscopic Endotracheal Intubation: To Determine the Time Frame to Achieve 95 Percent Proficiency.
Kimi L. Brouhard SRNA and Susan M. Kohn SRNA

Does a FloTrac/Vigileo Monitor Provide Accurate Cardiac Output Measurement During Cardiac Surgery?
Thomas Lewison SRNA and James Robinson SRNA

Effects of Intraoperative Positive End-Expiratory Pressure on Postoperative Atelectasis and Pulmonary Inflammation.
Eric Zellner SRNA and Kurt Rayhorn SRNA

Anesthetic Implications of Laryngeal Amyloidosis.
Brian Kvamme SRNA and Jarad Sampson SRNA

Saturday, May 19, 2012

0800 – 1600
Twin Cities Campus
Mother Teresa Hall
2440 Park Avenue
Minneapolis, MN 55404

Cost $55.00 – CRNA’s
$30.00 – Students

Continental Breakfast, Coffee, Tea, Soft Drinks and Lunch provided

This program received prior approval from the American Association of Nurse Anesthetists
Code Number: 1026253
Expiration Date: 05/19/2012
Effects of Intraoperative Positive End-Expiratory Pressure on Postoperative Atelectasis and Pulmonary Inflammation.

Kurt Rayhorn SRNA and Eric Zellner SRNA

Intraoperative positive end-expiratory pressure (PEEP) is not used consistently by anesthesia providers. It is often used for obese patients, the elderly, or those with pre-existing lung disease. The purpose of this synthesis paper is to determine the effects of intraoperative PEEP on postoperative atelectasis and pulmonary inflammation in patients without pre-existing lung disease. An EBSCO MegaFILE and PubMed search was conducted for peer-reviewed research studies that analyzed the effects of intraoperative PEEP on postoperative atelectasis and pulmonary inflammation. The results of this synthesis paper indicated that intraoperative PEEP may reduce postoperative atelectasis. However, there is inconclusive evidence to indicate benefit or adverse outcomes of the effects of intraoperative PEEP on postoperative pulmonary inflammation. Due to research methodologies and variations in patient populations of the studies reviewed, further research is needed on the effects of intraoperative PEEP on both outcomes to affect any changes in current practice.

Anesthetic Implications of Laryngeal Amyloidosis.

Brian Kvamme SRNA and Jarad Sampson SRNA

Laryngeal amyloidosis involves the deposit of proteins into the larynx which can make airway management difficult. It is a rare disease most accounting for 1% of tumors present in the larynx. The amyloid is most commonly deposited in the false vocal cords, which leads to progressive hoarseness and dysphagia. Surgical resection with a CO2 laser or Nd:YAG laser has been found to be superior to conventional open surgical techniques. The purpose of this literature review is to discuss the anesthetic strategies needed to effectively manage patients with laryngeal amyloidosis. A literature search was conducted using the PubMed, Google Scholar, and EBSCOhost MegaFILE databases. Laryngeal amyloidosis is a rare disease of the airway and knowledge of the disease processes, clinical presentation, and anesthetic management can give the anesthesia provider a strong knowledge base for management of the airway. Anesthetic management should focus on a thorough airway assessment prior to direct laryngoscopy. Patients with anticipated difficult airway management may require a rapid sequence intubation (RSI) or fiberoptic intubation. The anesthesia provider should also anticipate the possibility of massive hemorrhage during intubation or surgical excision caused by manipulation of amyloid-infiltrated vascular tissue. In severe cases of airway obstruction transtracheal ventilation or emergent tracheostomy may be needed to maintain the airway.

STUDENT SEMINAR RESERVATION FORM

NAME:__________________________________________________________________________________
ADDRESS: ______________________________________________________________________________
CITY / STATE / ZIP: ______________________________________________________________________
AANA NUMBER: ________________________________________________________________________

PLEASE MAKE CHECK OUT TO:
GRANT ACCOUNT 5309

Cost $55.00 – CRNA’s
$30.00 – Students

2500 Park Avenue
Minneapolis, MN 55404
ATTN: Veronica Murphy
SMU Anesthesia Students and Alumni Facebook Page Update

Launched in April, 2009, there are now more than 175 members. To join, become a member of Facebook and look for Saint Mary’s Nurse Anesthesia Academic Groups or click on the link below. Currently, students are looking for jobs and paper ideas.

Saint Mary’s Anesthesia Facebook

Does a FloTrac/Vigileo Monitor Provide Accurate Cardiac Output Measurement During Cardiac Surgery?

Thomas Lewison SRNA and James Robinson SRNA

Background: Anesthesia providers depend on reliable cardiac output (CO) measurements along with clinical knowledge and expertise in making peroperative patient treatment decisions. The pulmonary arter catheter (PAC) thermodilution method remains the most frequently employed CO measurement technique. A less invasive technology, called the FloTrac/Vigileo, measures CO by analyzing peripheral arterial pulse waves.

Methods: A literature review was conducted on the FloTrac/Vigileo monitoring system to investigate its accuracy and reliability of cardiac output measurements in comparison to the PAC thermodilution technique. PubMed, ScienceDirect, Medline, and Google Scholar databases were accessed to acquire research studies for this review.

Results: A majority of the literature used for this review confirmed that the FloTrac/Vigileo system’s performance was comparable to the PAC thermodilution technique in measuring CO.

Conclusion: This literature review indicates that the FloTrac/Vigileo device offers a reliable alternative to the PAC for cardiac output assessment in managing cardiac surgical patients’ hemodynamics. However, reliability quickly declines in cardiac surgical cases involving rapid and extreme changes in vascular tone. Recently, the manufacturer of FloTrac/Vigileo has introduced a new version of software to increase the device’s performance in hyperdynamic patients. The accuracy and reliability of this improvement will need to be investigated in future studies.

The Doctor of Nursing Practice Degree at Saint Mary’s

Saint Mary’s University Board of Trustees has approved offering the Doctor of Nursing Practice through the Graduate School of Health and Human Services. Work on planning this degree is anticipated to start this May. The anticipated nursing majors are adult nurse practitioner, family nurse practitioner, behavioral health nurse practitioner and nurse anesthesia. These majors were determined after an environmental scan of Minnesota and the Twin Cities metro area was conducted. The process of developing curricula and obtaining necessary approvals from state and national agencies will take at least a year. The current nurse anesthesia curriculum will move to the doctoral level after the launch of the other three nursing majors.

This Semester’s Courses

NEW STUDENTS
- (NA640) Chemistry & Physics
- (NA635) Professional Writing for Nurse Anesthetists
- (NA630) Professional Aspects of Nurse Anesthesia
- (NA606) Research Design & Statistical Analysis

JUNIORS
- (NA781) Synthesis Paper Proposal
- (NA780) Clinical Integration
- (NA771) Clinical Practicum II
- (NA650) Anatomy and Physiology Section A

SENIORS
- (NA774) Clinical Practicum V
- (NA783) Synthesis Paper Presentation
- Class of 2012 program completion date: August 20, 2012

ATTENTION ALUMNI

IF YOU HAVE NEWS, EVENTS OR ACCOMPLISHMENTS THAT YOU WOULD LIKE YOUR CLASSMATES TO SEE, PLEASE SEND IT TO:

Merri Moody at: mmoody@smumn.edu

Applications for the Class Starting in 2012

The process for reviewing applications and selecting the next class began in April. Out of 176 applications, 80 candidates will be invited to interview. Six candidates will join the class from the waiting list.
There have been 678 GRADUATES from 1952 through 2011.

TRANSCRIPTS
To get your transcript please send a request to the Assistant Registrar of the Twin Cities Campus. Please include your name, student ID number, the years of attendance, the number of transcripts needed, where you want them sent, and your signature. We do not have copies of diplomas.

Assistant Registrar
Saint Mary’s University of MN
2500 Park Avenue
Minneapolis, MN 55404-4403

VERIFICATION OF EDUCATION FOR EMPLOYERS
In accordance with federal regulation, the student/alumni must give permission for any information to be released by the college. Verifications cannot be done over the phone. Please sign a consent form your employer or send a request with your signature to:

Assistant Registrar
Saint Mary’s University of MN
2500 Park Avenue
Minneapolis, MN 55404-4403
FAX: 612-728-5121

We’re on the web!
www.smumn.edu/anesthesia

Program Staff
Merri Moody
Program Director
Carol Hunter
Associate Director
Mary Skelley
Clinical Director
Wendy Sims
Faculty
Veronica Murphy
Program Coordinator

Commencement Ceremony: Class of 2012
Please join us on Sunday, June 3 at 3:30 PM for the graduation ceremony for the Class of 2012. The ceremony is being held at the Saint Mary’s Event Center, 2540 Park Avenue, Minneapolis. Parking is available on the street or in the parking lots behind the university. If you are an academic or clinical faculty member and would like to participate in the processional, please contact Veronica Murphy at (612) 728-5132.

Though the students will not finish until August 20, this is one of the last times they will be together as a group before they start their new careers. The commencement exercises are followed by a reception. Please plan to attend and help our students celebrate!