Dogma, Myth or Fact?

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Financial Disclosure

There is no financial conflicts with this presentation.

Lecturing about a topic does not constitute endorsement of any product. Please take the time to research each topic for more information.

Mentioning a product or company does NOT represent endorsement.

Sully, Shadow and Fozzie
http://www.trollwayanesthesia.com/crna-and-srna-
anesthesia-review-guide-2014/

Free textbook compliments of your state association and leadership!

A New Approach

Why Hospitals Should FLY
The Ultimate Right Way to Patient Safety and Quality Care

If Disney Ran Your Hospital
96 Things You Should Do Differently

Health Care Reform Now!
A Prescription for Change
Dogma?

Dogma is a principle or set of principles laid down by an authority as incontrovertibly true. It serves as part of the primary basis of an ideology or belief system, and it cannot be changed or discarded.

Shibboleth -- Ancient Hebrew Word

A custom, principle, or belief distinguishing a particular class or group of people, especially a long-standing one regarded as outmoded or no longer important.

Traumatic injury is a serious problem, with over five million worldwide deaths from trauma per year. An estimated 15-20% of these deaths are potentially preventable with better control of bleeding. Damage control resuscitation involves early delivery of plasma, red blood cell and platelet transfusions to correct hemorrhagic shock induced by damage control surgery. An optimal ratio of plasma, red blood cell and platelet units of 1:1:1 appears to be the best substitutes for fresh whole blood, however, the current literature consists only of survivor biased observational studies.
Think outside the BOX
We can no longer sit by the wayside, we must make ourselves better.
Keep a OPEN Mind!

Multimodal
Synergy
Preemptive
Standard, Policy, Guideline, Suggestion???
Zofran

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AFE – September 29, 2014 (presentation)
Dr. B Leighton, Cooper, Otto (abstract fall 2013)

41 G8P3-39 weeks at 31 min ACLS: Given A-OK at 1mg/8mg/30mg
Survived and left hospital with small neuro deficits

28 G2P1-39 weeks at 17 Min ACLS: Given A-OK at 0.8mg/4mg/30mg
Survived with no neuro issues

Thrombosaurs/serotonin
Use this in conjunction to current treatments.
At this time this is a adjunct to get the patient to return to circulation.
5/3/2017

400 mg of riboflavin, 65 mg of caffeine and 325 mg of Tylenol.
FDA Drug Safety Communication: Codeine use in certain children after tonsillectomy and/or adenoidectomy may lead to rare, but life-threatening adverse events or death

FDA and Codeine? — CPY2D6 ultra-rapid metabolizers

Codeine is a prodrug, meaning that it has to be converted into its active form, morphine, for its analgesic effect to be fully realized. Cytochrome P450 isoenzyme-2D6 (CYP2D6) is responsible for its hepatic conversion, and of course this extra biotransformation step increases the chances for alterations in the extent and speed of the enzyme's conversion of codeine to morphine.

Codeine for analgesia: restricted use in children because of reports of morphine toxicity

Aspirin (ASA, acetylsalicylic acid)

• Eisenberg 2010
• Newscome 2008
• Dimitrova 2012

You might be surprised to learn that stopping daily aspirin therapy can have a rebound effect that may increase your risk of heart attack. If you have had a heart attack or a stent placed in one or more of your heart arteries, stopping daily aspirin therapy can lead to a life-threatening heart attack.
Aspirin is recommended as a lifelong therapy that should NEVER be interrupted for patients with cardiovascular disease.

Clopidogrel therapy is mandatory for six weeks after placement of bare-metal stents, three to six months after myocardial infarction, and at least 12 months after placement of drug-eluting stents.

Perioperative Antiplatelet Therapy; Am Fam Physician. 2010;82(12):1484-1489. Copyright © 2010 American Academy of Family Physicians.)
Ask the question??
Correct Use!

Bair Hugger Linked to Burns
From Hosing During Surgical Procedures

Third-degree burns due to intraoperative use of a Bair Hugger warming device

MISUSE OF BAIR HUGGER WARMING BLANKETS COULD CAUSE BURN INJURIES

1. Third-degree burns due to the infrared heating blanket, Bair Hugger, which is used to provide heat and prevent hypothermia during surgery. These burns can be severe and result in significant tissue damage.

2. The Bair Hugger is a device that circulates warm air to keep patients warm. However, it can cause burns if not used properly.

3. To prevent burns, it is important to follow proper protocols and settings when using the Bair Hugger.

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IV Starts? --- Pain Theory?

Intradermal Lidocaine

Verse

Intradermal Saline:


- **Bacteriostatic normal saline compared with buffered 1% lidocaine when injected intradermally as a local anesthetic to reduce pain during intravenous catheter insertion.**

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What do?

Avocados, Bananas, Hazelnuts and Chestnuts have in Common?

21% in common? (58%)
Increase Food Allergy
A kiss in 2005—Teen Dies

Peanuts – peanut oil used in Fresenius propoven
  • (a preparation product from Europe showing up in hospitals in the U.S.)


• Mehta, 2014. Major finding: No allergic reactions were reported in patients with known food allergies who received propoven prior to undergoing endoscopy.
• Data source: A review of records from 150 food allergy patients who had endoscopies performed at the Mount Sinai Center for Eosinophilic Disorders from November 2004 to January 2014.

Antiseptics

Chlorhexidine digluconate is a common disinfectant
  • Home uses: mouthwash, toothpaste, ointments, suppositories
  • Medical uses: swabs for disinfection prior to epidural/spinal anesthesia, surgical incisions, urinary catheterization

Chlorhexidine is becoming more recognized as a cause of perioperative anaphylaxis.
Desflurane

Time to extubation decreased with Desflurane: 20-25% decrease.

Dexter et al. Anesthesia Analg. 2010

What if you save 7 minutes on a basic case?
• $140 savings...wow....

Cost?

Agent Cost Based on MAC
Enter Time in minutes
60
Vaporizer at 1 MAC for middle-aged adult
Enter Fresh Gas Flow in L/min
2
Size of Molecular
Cost of
Generic bottle ml
Cost/Unit
Cost/ml
Weight
Density
MAC 1 MAC
Desflurane 240 $115.00 $0.48 168.04 1.465 6.00 $16.41 ($8.20)
Sevoflurane 250 $172.22 $0.69 200.05 1.520 2.10 $9.47

Cost?

Agent Cost Based on MAC
Enter Time in minutes
120
Vaporizer at 1 MAC for middle-aged adult
Enter Fresh Gas Flow in L/min
2
Size of Molecular
Cost of
Generic bottle ml
Cost/Unit
Cost/ml
Weight
Density
MAC 1 MAC
Desflurane 240 $175.00 $0.68 168.06 1.465 6.00 $32.47 ($16.23)
Sevoflurane 250 $272.22 $0.69 200.05 1.520 2.10 $19.47
Desflurane is bad for the environment

Sevoflurane is slightly better

Glass Particle Contamination –
Filter needle use with ampules

Do you do it correct?
Do I use Indigo or Methylene blue?
Big risks with both!
How Many Blades are there?

Are you just a miller or Mac?

You can’t fix stupid, but you can sedate it.

Lots!!!---14 types

- Cranwall
- Jackson
- Janeway
- Reduced Flange
- Macintosh
- Magill
- Miller
- Parrott
- Phillips
- Wisconsin
- Robert-Shaw
- Siker
- Soper
- Wisconsin-Hipple
Did you realize?

- There are nearly 50 basic airway tools...
- That doesn’t even count the multiple variations of these tools and other tools not cited in the May 2012 Airway update
  - Pick 3-6 and get really good!

**New school of thought coming out!**

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Is the age of the DVL a thing of the PAST?

The best thing about the PAST is that it teaches you what not to bring into your **FUTURE**

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New Ultrasound?---
"Another tool to distinguish us from the CRNA"


Prophylactic intravenous ondansetron and dolasetron in intrathecal morphine-induced pruritus: a randomized, double-blind, placebo-controlled study.

Anesthesiology, 2015; 122(1):
Tattoos

Professional inks may be made from iron oxides

Lumbar Epidural Catheter Placement in the Presence of Low Back Tattoos: A Review of the Safety Concerns
Dawn Welliver, CRNA, MS
Mark Welliver, CRNA, DNP
Tammy Carroll, CRNA, MSN
Peggy James, MD

Photic sneeze reflex
Autosomal Dominant Compelling Helio-Ophthalmic Outburst reflex

25% of population evoked by the bright light.
Trigeminal

Proparacaine:
DO NOT USE TETRACAINE

Proparacaine
Where do you put your pulse ox?
Verma et al. (1995) randomized 44 patients
Verma et al. (1997) randomized 38 patients
Shahinian et al. evaluated 34 patients

Challenge PONV Dogma

There is a complex set of mechanisms that are involved in nausea and vomiting.

So we really need to start considering a multi-modal attack route to prevent this response

**WE need to leave behind old school thoughts and embrace the idea that everyone should get something to prevent PONV/PDNV.**

Nausea and vomiting is a complex mechanism and needs to involved a variety of classes of drugs to treat

To Feed or Not to Feed....?????

- Do outpatients need to drink and eat postop?

Usually limit postop drinking & feeding after GA.
Myth

Only a select group of patients should be getting anti-emetics?

Truth

Nearly every patient should get some form of PONV/PODV prevention and planning.

Multi-modal, preemptive and synergy

These scoring systems have been proven to reduce PONV significantly in RCTs but have not been widely implemented into routine clinical practice. An alternative strategy not yet studied may be to administer antiemetic prophylaxis to all patients who are having inhalational anesthesia, opiates or major abdominal surgery.

This approach is gaining popularity among the anesthesia community given that the cost-and side-effect profile of commonly used antiemetic drugs is small.

Perioperative clinical factors & immune function

Supplemental perioperative oxygen improves postop outcomes

\[
\text{FO}_2 \text{ of } 0.8 \text{ doubles subcut O}_2 \text{ tension & halves postop wound infection rate}
\]

Supplemental O\textsubscript{2} ↓ PONV after laparoscopies & laparotomies.

*Curr Opin Anesth* 2006;19:11-18
100% Oxygen at the end?

Anesthesia Dogmas and Shibboleths: Barriers to Patient Safety?
Ronald J. Gordon, MD, PhD. 2012

Wakeup on 100% oxygen: As in the year 1995, for the typical anesthetic emergence in 2011, the trainee is instructed to awaken their patients on 100% oxygen. This provides an extra measure of security in the event of laryngospasm, laryngeal obstruction or inadequate gas exchange after tracheal extubation. Recently, this practice has been questioned by a number of leading authorities.10,11,42 Both Lumb and Lindahl and Mure noted the brief periods of 100% oxygen following extubation, which increases the likelihood of postoperative pulmonary complications.44 In a recent study, Lumb et al. also demonstrated that this atelectasis cannot be reversed effectively by standard recruitment maneuvers.45 Benoit et al., using computed tomography scans to measure the extent of atelectasis, noted a significant, 6.8% degree of atelectasis in

Anesthetic-specific risk factors

Use of nitrous oxide

Use of neostigmine to reverse NMB

Sinclair DR. Can post-operative nausea and vomiting be predicted? Anesthesiology 1999;91:109-118

Is it true?
It true? Neostigmine

Meta-analysis by Cheung, Sessler, Apfel

• 933 patients in 10 studies
• Extracted data on PON and POV for early, delayed, and overall postoperative periods
• Neostigmine was not associated w/ a significant ↑ in PON or POV
• Combination of neostigmine with either atropine or glycopyrrolate did not significantly ↑ incidence of PON or POV (0-24 h)
• No ↑ vomiting w/ ↓ dose of neostigmine


Is it true?

Nitrous

Omitting nitrous oxide in general anesthesia: Meta-analysis of intraoperative awareness and postoperative emesis in randomized controlled trials.

British Journal Anaesthesia 76:186-93,1996. Nitrous oxide adds to the number of patients who have postoperative vomiting only if the baseline risk of vomiting is above average. The average risk groups experience no increase in PONV when nitrous oxide is used.
Himmelseher S, Durieux ME. Revising a dogma: Ketamine for patients with neurological injury

- N = 79 trials (> 500 participants)

- Methods:
  - Search from 1994-2004
  - Randomized controlled trials
  - Non-randomized trials or cohort studies

- Results & Conclusions:
  - Ketamine does not increase ICP when used with controlled ventilation, co-administration of a GABA receptor agonist, and without nitrous oxide.
  - Hemodynamic stimulation induced by ketamine improved cerebral perfusion.
  - N-50, S(+)-ketamine has neuroprotective effects.
  - TIA: Ketamine has neuroprotective effects.
  - Improved outcomes only reported with brief recovery interval and small doses.

Guidelines for Fluid Resuscitation

Restrictive does not mean NO fluids

Like anesthetics throughout a case change, so does the fluid requirement vary and change!

Goal Directed Therapy:

- Tailored to the needs of each patient
- Goal is to maintain homeostasis
- Maintain circulatory volume
- Avoid unnecessary outcomes
Colloid versus crystalloid

Long-standing controversy regarding merits of crystalloid versus colloid for fluid resuscitation

Numerous studies

* None have unequivocally demonstrated distinct advantages in terms of pulmonary complications or survival with either therapy

Colloids more expensive & don’t have same safety profile as crystalloids

* Hard to justify their use unless rapid volume expansion needed
* Less hemodilution w/colloids than crystalloids

Joachim Boldt

Joachim Boldt, a German anesthesia provider who used to be considered a leading researcher into colloids, has been stripped of his professorship and is under criminal investigation for possible forgery of up to 98 research studies.

FDA Safety Communication: Boxed Warning on increased mortality and severe renal injury, and additional warning on risk of bleeding, for use of hydroxethyl starch solutions in some settings—November 25, 2013.
**The battle! Fact or Bias?**

2011, Colloid or Crystalloid: Any Differences in Outcomes?

Tong J. Gan, M.D., M.H.S., F.R.C.A.
Professor and Vice Chair, Department of Anesthesiology, Duke University Medical Center; Durham, NC. In the International Anesthesia Research Society Journal.

"In summary, the choice of fluid administration in the perioperative period can affect postoperative outcomes. Colloid results in a more effective plasma volume expansion compared to crystalloid and hence lower volumes are required. Crystalloid is an essential part of perioperative fluid regimen for replenishing insensible and interstitial fluid loss. However, large volumes of crystalloid are associated with gastrointestinal dysfunction and delay bowel recovery. Balanced salt solutions appear to provide better postoperative outcomes than normal saline."

**What IV solution to you choose?**

NS or LR? (137 meq)

Good for what situation?

Panic attacks... oh boy?

*Lactate infusions commonly induce feeling of anxiety, and few cases of panic attack have been reported." Packaging insert*
Measuring the Safety of Writing on Intravenous Bags
Sarah VanDyke, RN, BSN, Rosemary Turcotte, NCM, RN, Sheila Crow Stolman, RN, and Dawn Thweatt, FNP
DOI: http://dx.doi.org/10.1053/j.jvsm.2014.04.005

Do you write on your IV or put tape on it?
ISMP also cautions against writing an expiration date directly on the IV solution. Volatile chemicals from the ink may leach into the solution.
http://www.accessdata.fda.gov/psn/printer.cfm?id=186

Red Hair? The researchers’ findings showed that the old CRNA’ adage is true: Redheads do require more anesthesia. In fact, it took an average of 20 percent more all due to the MC1R gene. This is because in redheads, the mutated MC1R gene produces phaeomelanin, instead of melanin, which is the pigment for black, brown, and black/brown hair. Those with the MC1R mutation are more sensitive to opiate pain killers — which means they’ll actually need less — but less sensitive to other types, most notably local anesthetics.

Godmother of Pain
Margo McCaffery RN 1968

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage.

- Pain in whatever the experiencing person says it is
- May not be directly proportional to amount of tissue injury
- Highly subjective, leading to under treatment

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Can you do anesthesia without narcotics?

We Must Start to Think Differently!

Multi-Modal Synergy Pre-emptive

Acute Perioperative Pain

Perioperative pain

- Approximately 46 million inpatient procedures and 35 million outpatient surgeries were performed in the US in 2006.

- Despite new treatment standards, guidelines, and educational efforts, acute postoperative pain continues to be undertreated, with up to 50% of patients in the US still failing to receive adequate postoperative pain relief.

- 11% severe pain
Chronic Pain
Involves complex processes and pathology. Usually involves altered anatomy and neural pathways. It is constant and prolonged, lasting longer than 6 months and sometimes for life.

Last Longer than 6 months
Serves NO purpose
Typically can not identify a cause
Leads to pain behaviors: Negative emotions, anxiety, depression, sleep deprivation. May lead to the patient seeking active end of life.

Very difficult to treat

Nonspecific Low Back Pain and Return to Work

10% of chronic pain patients choose to work. They feel psychologically better.
Chronic pain is the number one cause of adult disability in the United States. Approximately 50 million Americans live with chronic pain today. Chronic pain costs society more than $100 billion each year.

Nearly a third of Americans will experience chronic pain at some point in their lives.
Seventy to 85 percent of adults in the United States have back pain at some point in their lives.

Ketorolac (toradol)

NO evidence of unwanted sedation, absence of tolerance, reduction in opioid related side effects.
Studies show use of Toradol with mild narcotics decreases hospital stay. Faster return to bowel function.

Perioperative Single Dose Ketorolac to Prevent Postoperative Pain: A Meta-Analysis of Randomized Trials
60 mg IM worked better than 30 mg
Accounted for the original Glassman study flaws.

Labor Epidural? Do we always have to?

Not Everything is it appears? Labor Epidurals going away?

Blair et al. Patient-controlled analgesia for labor using remifentanil: a feasibility study?

Remifentanil PCA with a bolus dose in the range 0.25–0.5 µg kg and a lockout time of 2 min appears a safe and effective drug for use in labor in patient-controlled analgesia systems.
Is Nitrous Back? 2009

The position of the American College of Nurse-Midwives that women should have access to a variety of measures to assist them in coping with the challenges of labor. Among these should be nitrous oxide, which is commonly used in many other countries.


What about? What in Common?
Magnesium

NMDA antagonist

- Dose: 1-2 grams in a normally healthy patient diluted in 50-100 ccs given over 30 minutes

- Or: 30mg/kg bolus with 50mg/hr infusion for the duration of the case...

- Blocks bradykinin release in the local vasculature; works great as a protecting agent in small doses for propofol — dose this in 10mLs

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Intra-Articular Magnesium for Arthroscopic Surgery-Related Pain

Peri-operative intravenous administration of magnesium sulphate and postoperative pain: a meta-analysis

E. Albrecht, K. R. Kirkham, S. S. Liu, R. Brull


References


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Magnesium Sulfate Plus Lidocaine Erodes Propofol Injection Pain: A Double-Blind, Randomized Study

Wen Lin, MD; Ping Xiong, MS; Weidong Liu, MS; Juan Zhao, MS; and Hang Zhao, MD

Department of Anesthesiology, Department of Neurology, Department of Neurosurgery, West China Hospital, Sichuan University, Chengdu, Sichuan, China.
Perioperative single dose systemic dexamethasone for postoperative pain: a meta-analysis of randomized controlled trials

- Doses of 0.1 mg/kg or less are great for PONV but don’t help with pain relief.

- Doses above 0.2 mg/kg don’t get you any more pain relief. An exception may be greater pain relief with movement (e.g., early ambulation in total joint patients).

- Giving dexamethasone preoperatively improves pain relief considerably more than giving it after induction. (Optimally 1-2 hours before incision.)

- In general, we need not worry about side effects with 0.15 mg/kg any more than we do with current PONV doses.

It is OK......

The Effect of Single Low-Dose Dexamethasone on Blood Glucose Concentrations in the Perioperative Period: A Randomized, Placebo-Controlled Investigation in Gynecologic Surgical Patients

Murphy, Glenn S. MD, Sizkoci, Joseph W. MD, Avram, Michael J. MD, Goldberg, Steven B. MD, Shliker, Toby M.T., Vander, Jeffrey S. MD, Gray, Joya B., Lanty, Elizabeth M.

Anesthesiology & Anesthesics

doi 10.1097/01.ANE.0000350316.91204.97

Exparel: Be Aware for Safe Care

Exparel: Exparel: Be Aware for Safe Care
Myth?

Giving very little fluids

Restrictive does not mean NO fluids!
GOAL DIRECTED THERAPY!

Truth

Fluid resuscitation in the patient, is driven by goal directed therapy.

NOT hypovolemia and NOT hypervolemia

Goal is to avoid both extremes

PTFSS (PTSD)

Post Traumatic Frank-Starling Syndrome

Where am I one the curve?
Am I responsive? or
am I non-responsive?
Myth?

The patient must be NPO for 8 hours.

Truth

NPO guidelines are often out of date and not evidenced based.

NPO

"While it is desirable that there be no solid matter in the stomach when chloroform is administered, it will be found very salutary to give a cup of tea or beef tea about two hours previously."

Lord Joseph Lister, 1882
Pre-operative PO fluid

Myth?

Keep the operating room cold so the surgeon is happy?

MYTH BUSTED
Truth

The patient needs to be kept as close to 37 degree Celsius as possible!

HYPOTHERMIA

50% to 90% of surgical patients (approximately 14 million) experience inadvertent perioperative hypothermia each year. Between 30-40% of all surgical patients are hypothermic upon admission to PACU. Inadvertent hypothermia has been called as the most frequent, preventable complication of surgery and anesthesia.

<table>
<thead>
<tr>
<th>Cause found in PACU</th>
<th>Incidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central nervous system</td>
<td>30%</td>
</tr>
<tr>
<td>Periodic hypothermia</td>
<td>20%</td>
</tr>
<tr>
<td>Peds</td>
<td>10%</td>
</tr>
<tr>
<td>Plateaus</td>
<td>50%</td>
</tr>
<tr>
<td>Insufficient deoxygenation</td>
<td>20%</td>
</tr>
<tr>
<td>Hypothermia</td>
<td>15%</td>
</tr>
<tr>
<td>Drug therapy errors</td>
<td>5%</td>
</tr>
</tbody>
</table>

Caffeine--- Number one Abuse Legal Drug in USA

- Central Nervous stimulate
- Number one consumed psychoactive drug
- PDE inhibitor
- Withdrawal headache
- Via this action a secondary antiemetic; all subjective considering a few studies suggest it does not play a role
- Awake sleep cycle
- Increased sensitivity to catecholamines
Sudden Sniffing Death


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**Case Report**

**A Fatality from Sevoflurane Abuse**

Barry Levine1,2, David Cesari, Rebecca A. John Philip2, King3, Aaron Jacobs1 and David Fowler1

1Office of the Chief Medical Examiner, State of Maryland, 101 South W. Baltimore, Baltimore, Maryland 21201
2Office of the Medical Examiner, Medical Examiner, 1015 Annapolis Blvd., Suite 111, Rockville, Maryland (20853)
3US Army J.W. Stalnaker, San Antonio, Texas 78238

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**Abstract**

A case is presented of a 47 year old patient who died in a hospital emergency department. The patient was enrolled in a crisis intervention program for chemical dependency and presented to the emergency department with a history of alcohol dependence. The patient was prescribed Sevoflurane for sedation, and the patient was found dead at the time of transfer. The cause of death was determined to be asphyxia due to the inhalation of Sevoflurane gas.

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The text above is a case report of a fatality from Sevoflurane abuse. The patient was a 47-year-old man with a history of alcohol dependence. He was prescribed Sevoflurane for sedation, and he was found dead at the time of transfer. The cause of death was determined to be asphyxia due to the inhalation of Sevoflurane gas.
LipidRescue™ Resuscitation
20% lipid emulsion for rescue from drug toxicity

“LIPID RESCUE” FOR TRICYCLIC ANTIDEPRESSANT CARDBIOTOXICITY
Michael Stephen Biber, MD,*, Jamal Nasir Khan, MD, and Judith Anne Biber, MD,†
Department of Cardiology, Santa Ana Hospital Medical Center, Santa Ana, CA
*Presented at the American Heart Association Circulatory Support and Rescue Session at the 15th Annual Congress of the World Society of
†Presented at the Society for Research in Anesthesiology and Critical Care, San Antonio, TX, June 1999.
Innovar injection—a combination of droperidol and fentanyl.
(No authors listed)

MASSIVE TRANSFUSION
• Early Recognition of Massive Transfusion (MT) Patients
  • Most patients requiring emergency unmatched blood in ED will need MT
  • Predictors (3/4 70% 4/4 85% of MT)
    • SBP <110 mmHg
    • HR >105
    • HCT <32
    • pH <7.25

1:1:1
When somebody says whole blood just can’t be done

- Royal Caribbean Cruise Liners
  - 100,000 guests plus 37,000 crew at sea in 34 different ships each day
  - Many guests, elderly, overweight, on war and anti‐coagulants
  - High risk of GI bleeding
  - Often far from land, surgery goes on
  - Operational use of Fresh Whole Blood Transfusion Program
  - Screening questionnaires, rapid ABO typing and infectious disease testing

- 40 months there were 40 whole blood emergent transfusions
  - 1 allergic reaction
  - No infectious complications

Clinical practice improvement

- Identifying Continuous Quality Improvement in Clinical Practice

- Quality (MIPS) 60%
- Meaningful Use (MIPS) 25%
- Resource Use (Value Modifier) 0%
- Clinical Practice Improvement 15%
Why bother with the future?

“The future belongs to the unreasonable ones, the ones who look forward not backward, who are certain only of uncertainty, and who have the ability and the confidence to think completely differently.”

Charles Handy quoting Bernard Shaw

Section 2706 ACA

Midwives and nurses are as good as docs -- and sometimes better, WHO finds!!

- Cometto and colleagues, around the world looked at all the studies, they could find on the quality of care delivered by non-physicians. They settled on 53 that looked specifically at the quality of care delivered — and at how happy patients were with the care they got.
- “The evidence shows there aren’t statistically significant differences,” Cometto said. “The quality of care they provide is comparable to physicians. In some cases, for specific services, they actually outperform physicians.”
- The American Society of Anesthesiologists recently spoke out against what it sees as the overuse of nurse-anesthetists. “Somehow there has become the notion that you can take physician extenders and replace physicians,” said Dr. Jane Fitch, a former nurse anesthetist who is now a physician anesthesiologist. “We are really concerned about patient safety.”
- http://www.nbcnews.com/health/midwives-nurses-are-good-docs-sometimes-better-8C11506820
- Maggie Fox
  NBC News
  Oct. 31, 2013 at 6:32 PM ET
Stages:

First stage:
- Pain is caused by the uterine contractions and the dilation of the cervix.
- The cervix dilates to 10 cm to expel the baby.
- The dilated cervix plays a key role in pain.
- The nerves exceed 25 mmHg this pain travels via visceral afferent fibers accompanying the sympathetic nerves.
- The onset of perineal pain indicates the beginning of the first stage.
- T3-54
- Third stage is Delivery when the placenta is expelled.

Complication rate low for CNRA lumbar epidural injections

Health Day—Complication rates for fluoroscopically-guided lumber epidural needle injections (LESIs) performed by certified registered nurse anesthetists (CRNAs) are cited in this literature, according to a study published online April 27 in the journal for Healthcare Quality.

- Gerald J. Belant, D.M, of Southwest Interventional specialists in Albuquerque, N.M., conducted a survey of CRNAs pain practitioners who were involved in the number of fluoroscopically-guided LESIs performed at each of 20 complications in a six-month period.
- Most local anesthesia-related needle insertion complications (12 percent) occurred at 25 percent of the 12,000 procedures (77 percent) and involved 38 percent complications.
- First- and second-stage lumbar epidurals performed by CRNAs in rural and urban settings were found to be associated with the highest rates for bruising and irregular reactions. There were no cases of anaphylaxis or death. There was no association between needle practice setting or experience and complication rates.
- “CRNAs were able to safely and effectively perform fluoroscopically-guided LESIs with complication rates similar to physician rates cited in the literature,” the author wrote.

The Hill, March 22, 2017

Jeff Flake is a United States Senator representing the state of Arizona. Prior to his election to the U.S. Senate in 2013, he served in the U.S. House of Representatives from 2002-2013 representing the East Valley.

Interested with the care my father received, I did some research and learned that the medical center where he was treated is a facility that allows certified registered nurse anesthetists (CRNAs) independent full practice authority. This means that, as advanced practice registered nurses (APRNs), CRNAs are not required to be supervised by a physician—including an anesthesiologist—when providing anesthesia to patients. This allows for much more timely access to care and was a large factor in my father’s quick and successful surgery.

However, I still wanted to learn more to better understand the challenges that CRNAs face at their jobs every day. One of the caregivers during the surgery was Mike MacKinnon, a CRNA who provided the anesthesia. I interviewed further and was given permission to shadow Mr. MacKinnon for a day as he provided preoperative anesthetic care to his patients.
Dogma, Sink or Swim......Seek the Truth

Can I be excused? ... my brain is full!

Thank You!
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Questions?