

REDUCING POST OPERATIVE NAUSEA AND VOMITING

Scoring System to identify high risk patient

ROUTINE:

- Prophylactic antiemetics: 2 together
- 5HT₃, Dexamethasone, Cyclizine, Hyoscine
- Avoid Nitrous Oxide
- Reduce opioids

High Risk of PONV:

- Consider TCI propofol

SHORT ACTING ANESTHETIC AGENT

Induction

- Propofol/ opioid/ short acting muscle relaxant

Maintenance of Anesthesia

- Air/ Oxygen / short acting volatile agent/ TCI propofol
- Remifentanil infusion or short acting opioids

MONITORING NEUROMUSCULAR BLOCK

1. Ensures adequate abdominal muscle relaxation
2. Facilitates surgery and operating at a lower abdominal pressure
3. Ensures reversal of NMB and return of bulbar function - ? Less risk of micro – aspiration and post operative pneumonia
4. 2nd generation machines using acceleromyography better

ANESTHETIC AGENT & DEPTH OF ANESTHESIA MONITORING

Anesthetic Agent Monitoring

- To avoid awareness

BIS Monitoring

- Use to reduce giving too much anesthetic
- Especially elderly
- Reduction in post operative cognitive dysfunction

PERIOPERATIVE GLUCOSE CONTROL

- Poor glycemic control increases the risk of complications
- Tight glycemic control increases the risk of hypoglycemic events
- Maintain a normal glucose level
- Short term insulin glucose level necessary if patient becomes insulin resistant

MAINTAINING PATIENT BODY TEMPERATURE

Warm air blowers/ underbody heating/ warm IV fluids

- During surgery and into postoperative period

Hypothermia:

- Increased risk of wound infection
- Increased bleeding and transfusion requirements
- Shivering in PACU increases oxygen consumption
- Worse pain scores
- Reduction of morbid myocardial events

PROTECTIVE LUNG VENTILATION STRATEGY

- TV of 6-8 mls/kg
- Protects against lung damage
- Optimal PEEP
 - (reduces) micro aspiration)
- 8 mls TV /kg in ventilated patients allows the use of SVV and PPV

VENOUS THROMBO - EMBOLISM PROPHYLAXIS

- Risk scoring
- TEDS
- Calf compression
- Early mobilization
- Chemical prophylaxis
- Extended prophylaxis
- IVC Filter

Other Multifactorial Issues:

- Fluid therapy
- Cancer
- Chemotherapy

ANALGESIA = OPIOID SPARING

Analgesia:

1. Effective – Visceral and wound pain
2. Allow mobilization
3. Opiate Sparing

Oral Multimodal Analgesia:

1. Paracetamol
2. NSAIDS

ANALGESIA

Analgesia:

1. Effective
2. Allow mobilization
3. Opioid sparing

Oral Multimodal Analgesia :

1. Paracetamol
2. NSAIDS

Patients undergoing laparoscopic surgery can usually have their pain controlled by oral analgesics at 12-24 hours

Central neuroaxial:

1. Epidural
2. Spinal

Truncal/ Local Anesthesia:

- * Tap blocks
- * Rectus Sheath Catheters
- * Wound Infusion Catheters

MULTIBEAM ULTRASOUND

- Accurate targeting of nerves
- Less failure
- Enables lower volumes/ doses
- ? higher concentration
- Longer duration
- Catheter placement

OPTIMAL ANALGESIA AFTER SURGERY

Optimal Analgesia After Surgery



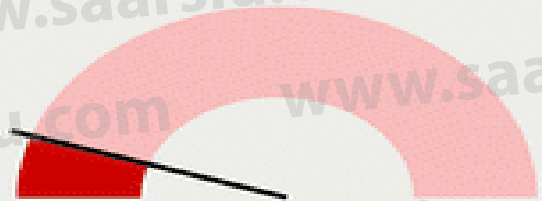
Optimized Patient Comfort

- Optimal Pain Rating
 - At Rest
 - With Movement
- ↓ Impact of Pain on Emotions
- ↓ Impact of Pain on Function
- ↓ Sleep Disruption
- Improve Patient Experience



Fastest Functional Recovery

- Drinking Liquids
- Eating Solid Foods
- Activities of Daily Living
- Mobilizing
- Bladder Function
- Bowel Function
- Normal Cognitive Function



Fewest Side Effects

- Nausea
- Vomiting
- Sedation
- Ileus
- Itching
- Dizziness
- Delirium

Encourages Postoperative DREAMS

[DRinking, EAting, Mobilizing, and Sleeping]

ANALGESIA SUMMARY

- There are many ways to provide analgesia for different surgical operations
- Efficacy and restoration of function is key
- Regular multimodal Analgesia and setting patient's expectations are core enhanced recovery principles
- Morphine sparing techniques are beneficial to avoid
 - ❖ Ileus
 - ❖ PONV
 - ❖ Drowsiness
 - ❖ Cognitive Dysfunction

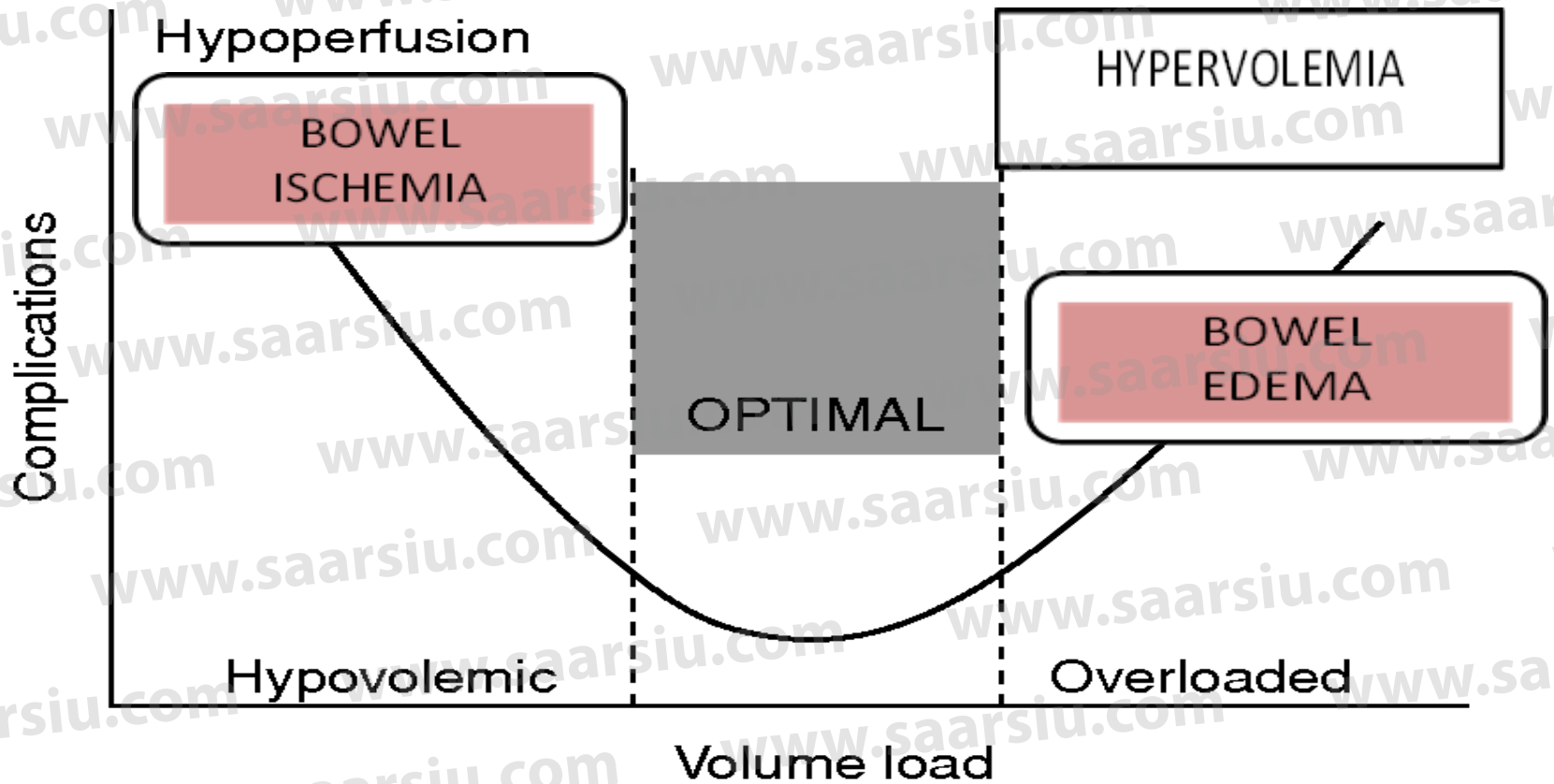
ANALGESIA SUMMARY

- Individual Approach:

- ❖ Patient
- ❖ Operation
- ❖ Surgical Approach

- Hospital should have a range of postoperative analgesic strategies
- Trouble shooting algorithms needed for breakthrough pain/ failure

OPTIMAL FLUID THERAPY



~~RESTRICTED OR LIBERAL FLUIDS?~~

Optimal Fluid Therapy is:

Right amount

Right Fluid

Right Time

ERAS FLUID THERAPY - OVERVIEW

Avoid Fluid shifts

- Avoid bowel prep
- Oral carbohydrate drink up to 2 hours preop
- Reduction of bowel handling and tissue injury- laparoscopic or laparoscopic assisted surgery
- Reduce blood loss

The following significantly effect fluid shifts / requirements:

- Open surgery/prolonged surgery
- Blood loss
- Prolonged SIRS, or sepsis

Individualised goal directed fluids to

- Maintain normovolemia
- Optimise DO₂i
- Vasopressors to maintain MAP
- Optimal Hb (individualized)

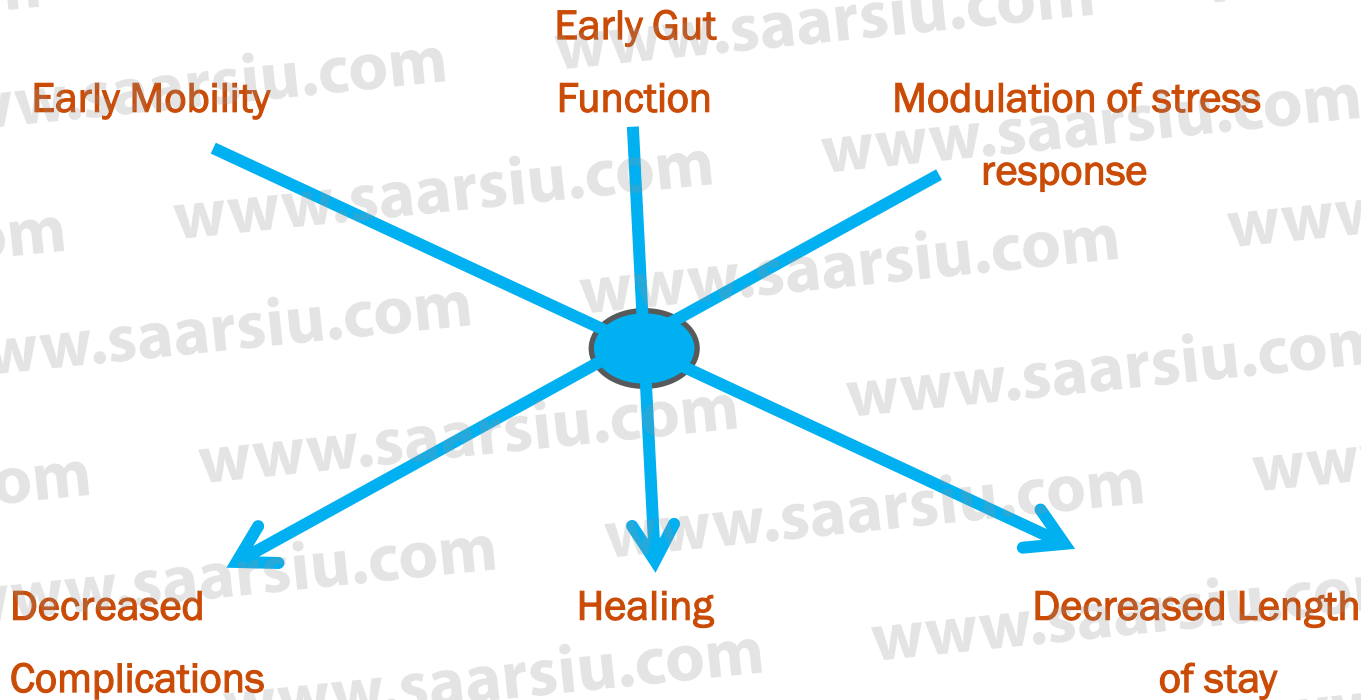
Postoperative

- Maintain normo-volaemia
- Restrict salt and IV fluid
- Early enteral feeding

SUMMARY - MAP

- If MAP is reduced below 65mmHg there is an increase risk of:
- Kidney Injury/ AKI
- Delirium
- Myocardial Injury/ MINS
- (Infection)
- The effect is increased by duration and magnitude below 65 mmHg
- An individualized MAP target may be beneficial but flow must be optimized first (so may not be just a pressure effect)

SIMPLIFIED ENHANCED RECOVERY IN LAPAROSCOPIC COLORECTAL SURGERY – TRIMODAL MODEL



**Thank
You**

