Enhanced Recovery Canada (ERC)

ERAS for colorectal surgery

Perioperative fluid and hydration management recommendations

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Enhanced RECOVERY Canada

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Disclosure

Dr. Gabriele Baldini

has an affiliation with the following organizations that could be perceived as a real or apparent conflict of interest in the context of this presentation:

Edwards Life inc. Canada

Research grant (2014)

Travel funding and consulting fees (2017-2018)

Merck Canada

Travel funding and consulting fees (2018)

The process

“Adopt”, “Adapt”, “De Novo”

1.Feldheiser et al. Enhanced Recovery After Surgery (ERAS) for gastrointestinal surgery, part 2: consensus statement for anaesthesia practice. Acta Anaesthesiol Scand. 2016 Mar;60(3):289-334

2. Carmichael et al. 2017. Clinical practice guideline for enhanced recovery after colon and rectal surgery from the American Society of Colon and rectal Surgeons (ASCRS) and Society of American Gastrointestinal and Endoscopic Surgeons (SAGES). Surg Endosc., 31(9):3412-2436. PMID 28776285.

3. Thiele et al. 2016. American Society for Enhanced Recovery (ASER) and Perioperative Quality Initiative (POQI) joint consensus statement on perioperative fluid management within an enhanced recovery pathway for colorectal surgery. Perioper Med. (London), 5:24. PMID 27660701.

4. Alfonsi et al. 2014. French Guidelines for enhanced recovery after elective colorectal surgery. J Visc Surg., 151(1):65-79. PMID 24378143.

5. Gustafsson et al. 2012. Guidelines for perioperative care in elective colonic surgery: Enhanced Recovery After Surgery (ERAS) Society recommendations. World J Surg., 37(2):259-84. PMID 23052794.

6. Nygren et al. Guidelines for Perioperative Care in Elective Rectal/Pelvic Surgery: Enhanced Recovery After Surgery (ERAS) Society Recommendations World J Surg (2013) 37:285–305

7. Lassen et a. 2009. Consensus Review of Optimal Perioperative Care in Colorectal Surgery. Enhanced Recovery After Surgery (ERAS) Group Recommendations. Arch Surg., 144(10). PMID 19841366

8. Available Canadian ERAS Perioperative fluid management protocols

Abandon

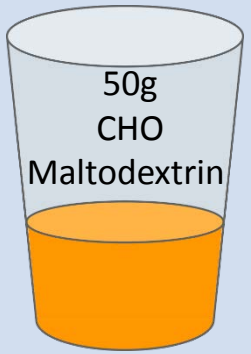
NPO before midnight

Encourage

2 h before anesthesia

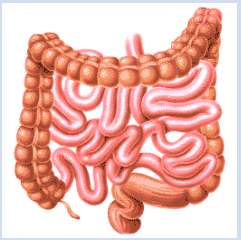
Clear fluids

8 h before anesthesia

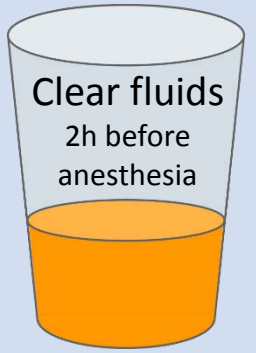


- 2 hours before anesthesia
- Drink within 20 minutes
- No sipping

Iso-osmotic MBP



If…



Preop

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Maintenance

Intraop

1-3 ml/kg/h
Balanced crystalloid solution

±

Goal-directed hemodynamic optimization

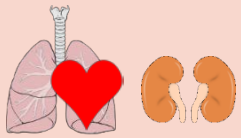
Cause → Hemodynamic anomaly → Treatment(s) to reverse hemodynamic anomaly

Anesthesia
±

Hypovolemia
±

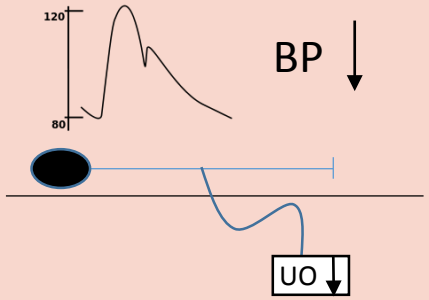
Surgical stimulation
±

Surgical position
±



Acute illness/
co-morbidities

HR ↑

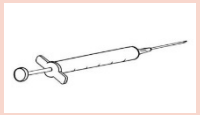


BP ↓

↓CO ↓SV
↑SVV ↑PPV

In high risk patient/surgery

Volume
±



Vasopressors
±

Inotropes

Do not treat all hemodynamic anomaly with IV fluids

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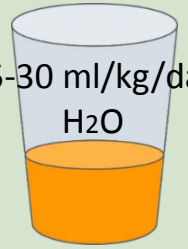
Monitor & document daily

Maintenance of daily H_2O and electrolyte requirements

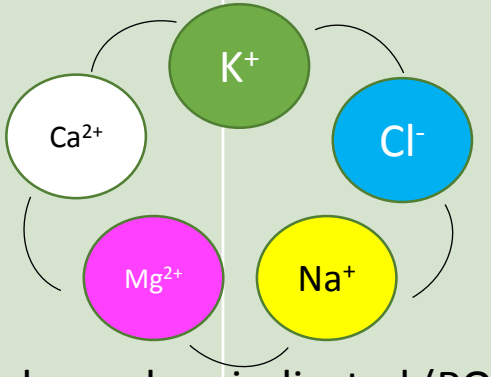
Oral intake tolerated



(KVO)

Oral intake NOT tolerated

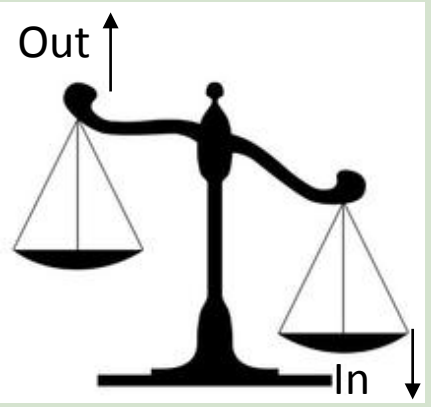
0.7 ml/kg/h



Replace when indicated (PO/IV)

Signs of hydration and hypovolemia

Fluid balance



(Including H_2O intake)

Weight gain until diet is tolerated

Postop

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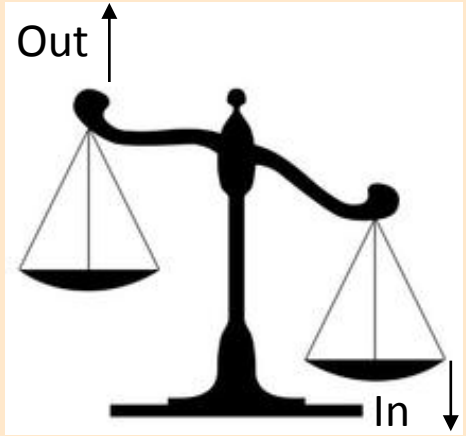
Intravascular volume optimization

Monitor & document
OR/End of Surgery/PACU/HDU/ICU/Ward



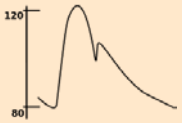
Symptoms and signs of hypovolemia

Fluid balance

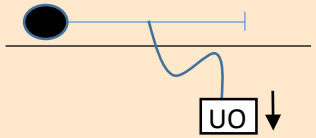


1. Symptoms and signs of hypovolemia


HR ↑



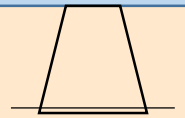
BP ↓



2. Determine Fluid Responsiveness before bolusing IV fluids

OR/HDU/ICU ←

↓CO ↓SV
↑SVV ↑PPV



Indicated for high risk patients/surgery

→ Surgical wards

PLR maneuver + PP

If Fluid Responder

↓

3. Bolus(es) IV fluids

3-5 ml/kg
Balanced crystalloid solution
X1, X2, X3

4. Reevaluate

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