SUPPLEMENTAL DIGITAL CONTENT

for Arslan-Carlon et al,

Goal-directed versus standard fluid therapy to decrease ileus after open radical cystectomy: a prospective randomized controlled trial

SUPPLEMENTAL FIGURES

Supplemental Figure 1. Algorithm for Fluid Therapy **Pre-Induction** in the Goal-Directed Fluid Therapy Arm

Supplemental Figure 2. Algorithm for Fluid Therapy in the **Operating Room** in the Goal-Directed Fluid Therapy Arm

Supplemental Figure 3. Algorithm for Fluid Therapy in the **PACU** in the Goal-Directed Fluid Therapy Arm

Supplemental Figure 4. Institutional Standardized Postoperative Enhanced Recovery Pathway for Radical Cystectomy Patients

Supplemental Figure 1. Algorithm for Fluid Therapy Pre-Induction in the Goal-Directed Fluid Therapy Arm

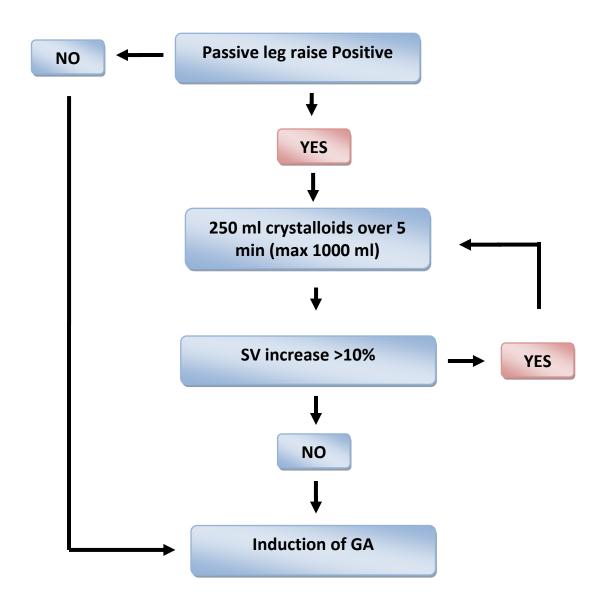
Passive leg raise:

- 1. Sit patient up 45 degrees while placing A-line
- 2. Record 3 stroke volume (SV) values 1 min apart
- 3. Put patient in Trendelenburg without moving the back of the bed, till the back is parallel to the floor and the legs are up in the air
- 4. Wait 1 min and record 3 SV values 1 min apart
- 5. Passive leg raise is positive when SV increases >10%

A-line insertion

SV measurement

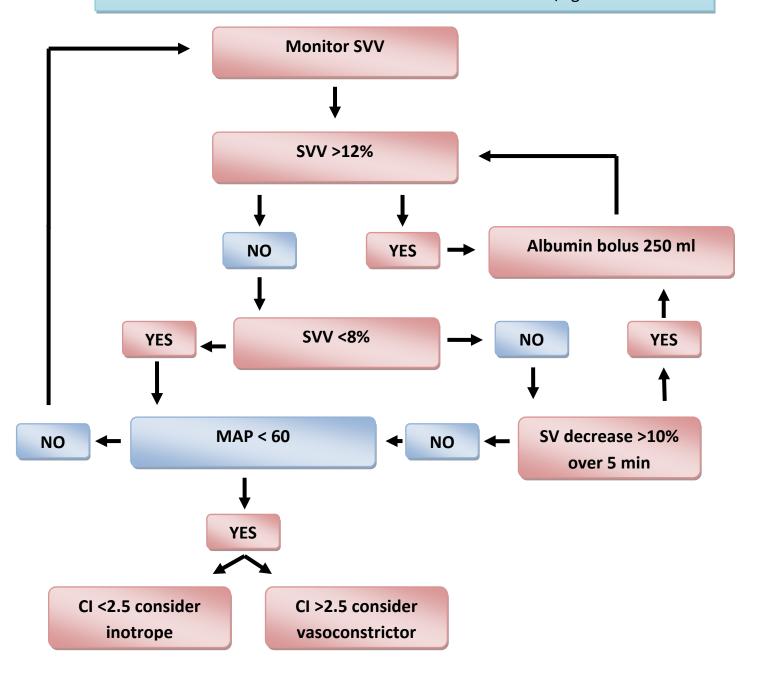
Passive leg raise



Abbreviations: A-line, arterial line; GA, general anesthesia; SV, stroke volume.

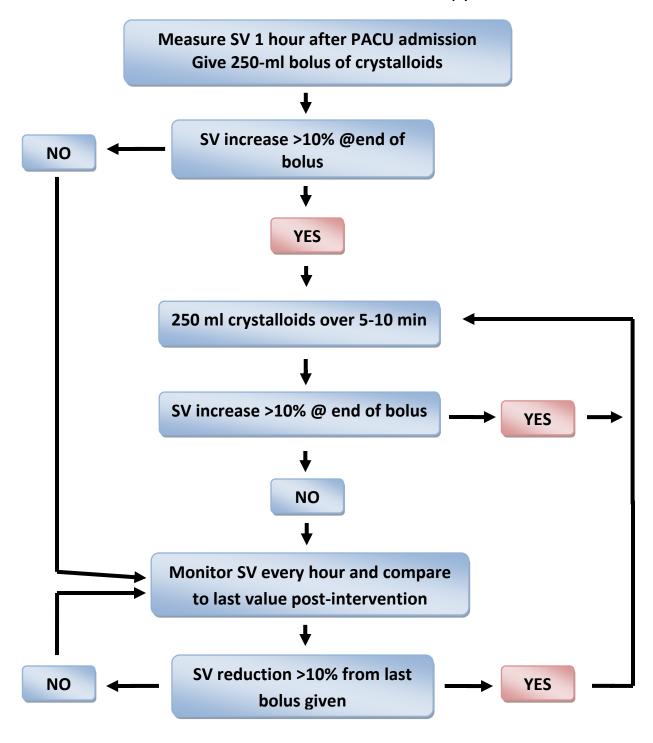
Supplemental Figure 2. Algorithm for Fluid Therapy in the Operating Room in the Goal-Directed Fluid Therapy Arm

- 1. Maintenance fluids: Crystalloids 3 ml kg⁻¹ h⁻¹
- 2. Positive pressure ventilation at 8 ml/kg IBW No PEEP
- 3. Monitor for NSR
- 4. HR >50 and <100
- 5. Albumin will be administered to a maximum of 20 ml/kg



Abbreviations: CI, cardiac index; HR, heart rate; IBW, ideal body weight; MAP, mean arterial pressure; NSR, normal sinus rhythm; PEEP, positive end expiratory pressure; SV, stroke volume; SVV, stroke volume variation.

Supplemental Figure 3. Algorithm for Fluid Therapy in the PACU in the Goal-Directed Fluid Therapy Arm



- 1. Additional boluses of 250 ml albumin
 - a. SBP <90
 - b. U/O < 0.5 ml/hr over 2 hours

- 2. Make sure to test A-line before assessing SV
- 3. Boluses should not exceed 500 ml Lactated Ringers without calling MD
- 4. Record all data in attached sheet

Abbreviations: A-line, arterial line; MD, doctor; PACU, postanesthesia care unit; SBP, systolic blood pressure; SV, stroke volume; U/O, urine output.

Supplemental Figure 4. Institutional Standardized Postoperative Enhanced Recovery Pathway for Radical Cystectomy Patients

Medical eval/clearance or Geriatric eval for pts ≥ age 75 with Social service eval •No mechanical prep unless issues with constipation (1-2 doses of Mg Citrate AM 24hr preop) •Full liquid diet 24hr preop, NPO post MN • Hibaclens shower in evening Outpatient Incentive spirometry teaching •Pt and family Education on surgery, periop path and expectations, WOCN marking and education •Epidural placed per pt/MD desire •DVT prophylaxis with SQ heparin 5000U unless contraindicated and Venodyne boots •ASA continued for pts with cardiac risk Presurgical Nausea/emesis protocol started Center POD 0 Opioid antagonist given SQ and continued x 3 days Arterial line placed, SV and SVV monitoring • Fluid replacement end-points according to randomized arm •Oral gastric tube placed and discontinued at extubation in OR Hypothermia prevention •IV acetaminophen during beginning of the case, IV ketorolac (Toradol®) given during closing if renal OR function permits •IV antimicrobial prophylaxis after induction and redosed intraop based on half life •Routine hemodynamic measures • Fluid replacement end-points according to randomization arm • Discharge to floor per standard PACU criteria •IV metoclopramide q 6 h and continued until bowel function returns/ routine antiemetic therapy **PACU** •24 hr of IV cefazolin (Ancef®) per institutional protocol •Trend hemaglobin and creat daily Mg monitored and replaced as necessary • Routine floor nursing care, VTE prophylaxis, OOB/ambulate • Postop pulmonary/PT care (POPP program for VTE and pulmonary prophylaxis) • Full liquids POD 2 and advance to regular as tolerated, chewing gum/lemon candy •Rectal suppository POD 2 if not flatus Floor •Epidural with change to oral POD3, Oral NSAIDS/acetaminophen for lesser pain • WOCN/appliance education or pouch tube management as indicated for pt and caretaker •Case management for discharge arrangements

Abbreviations: ASA, American Society of Anesthesiologists; DVT, deep vein thrombosis; IV, intravenous; MD, doctor; MN, midnight; NSAIDs, nonsteroidal anti-inflammatory drugs; NPO, nothing by mouth; OOB, out of bed; OR, operating room; PACU, post anesthesia care unit; POD, postoperative day; PT, physical therapy; pt(s), patient(s); SQ, subcutaneous; SV, stroke volume; SVV, stroke volume variation; VNS, visiting nurse service; VTE, venous thromboembolism; WOCN, Wound, Ostomy and Continence Nursing.

VNS arranged

Caretaker education

Discharge

•Medications and home instructions reviewed