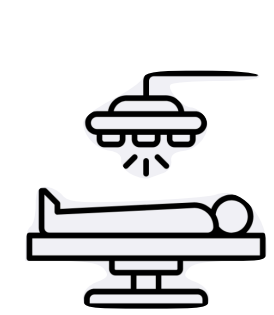


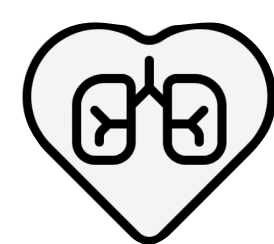
Neuraxial Anesthesia As A Safe And Effective Alternative to General Anesthesia for Kidney Transplant Recipients

 **Olivia Vetter MD**, Akansha Agrawal MD, Vinayak Rohan MD, Satish Nadig MD, Vicente Garcia Tomas MD

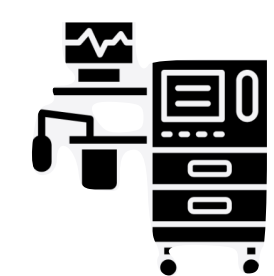
Introduction



Definitive treatment for chronic renal failure patients = major abdominal surgery + potentially significant hemodynamic changes



End-stage disease status → increased risk of cardiopulmonary and metabolic problems, can preclude safe use of general anesthesia (GA)



- Goals of anesthetic:
- minimize toxicity to patient & transplanted organ
 - provide adequate pain relief
 - maintain stability during fluid shifts

Although GA commonly used, 4 kidney transplant recipients successfully underwent surgery with neuraxial anesthesia

Despite the absence of specific contraindications to GA, indicates the potential applicability to sicker patients in the future

The AWAKE Program

INCLUSION CRITERIA	EXCLUSION CRITERIA
Living Donor	Lumbar Spine Instrumentation
Expected surgery time < 3 hrs	Anticoagulation
BMI < 30	Complex surgical anatomy (vascular, 3rd kidney)
	Psychological contraindications
	Infection at Injection Site
	Significant LE Neuropathy
	Increased Intracranial Pressure
	Severe AS or Pulmonary HTN

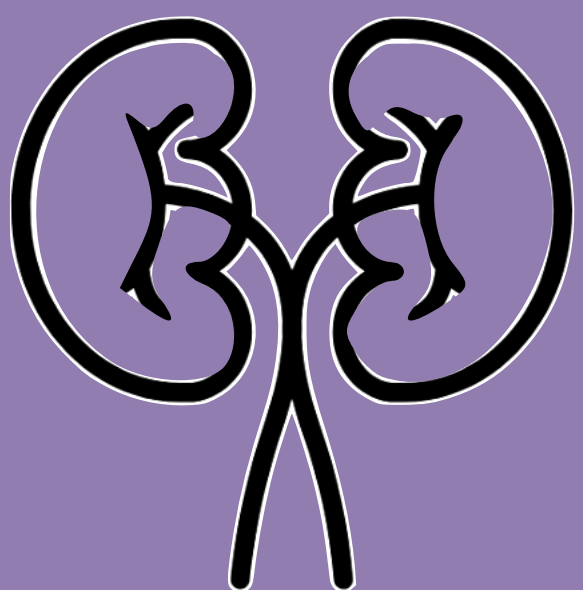
ANESTHESIA PROTOCOL	
Anesthesiologist pre-screen	
Preop labs day of surgery	Normal PT/PTT, Platelet count >100
VTE prophylaxis preoperatively	Heparin SQ held preoperatively
Bilateral QL blocks for postoperative analgesia	In preoperative area 20 mL 0.25% Bupivacaine on each side +/- sedation
Spinal (or CSE)	In O.R. 25G Needle 0.75% hyperbaric bupivacaine 15-18.75 mg + Fentanyl 15 mcg Max 2 attempts (trainee + attending)
VTE prophylaxis	Administered after spinal before incision (Heparin 5000 Units SQ)
Intraoperative sedation	Low dose propofol infusion per patient preference
Monitoring	No routine A-line, CVP, 2 nd IV
Hypotension	Managed with low dose phenylephrine, calcium
If CSE	Epidural catheter removed in PACU (4 hours after Heparin dose)
PACU phase	Avoidance of opioids



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Neuraxial anesthesia is a **safe and effective alternative** to general anesthesia for kidney transplant recipients, offering stable hemodynamics and adequate pain relief.



It may be **particularly beneficial** for sicker patients with contraindications to general anesthesia.

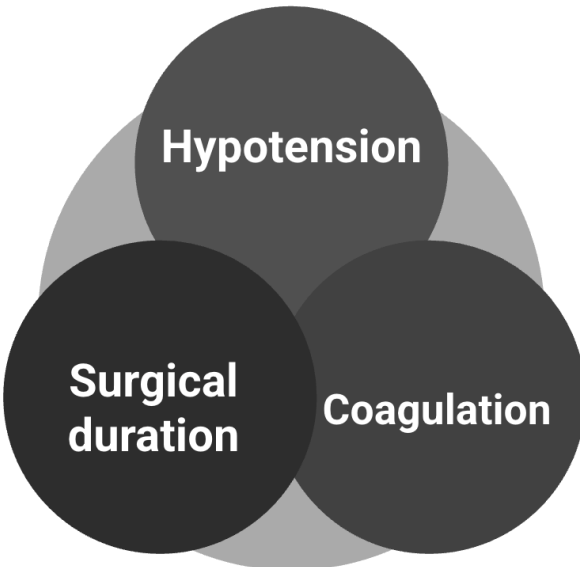


Patient Characteristics

Patient	Age	Sex	BMI	Spinal or CSE?	Case Duration	POD of discharge
1	28	M	24	CSE	81 min	1
2	75	M	28	Spinal	84 min	2
3	74	M	25	Spinal	102 min	2
4	34	M	34	Spinal	101 min	1

Discussion

Traditional barriers to neuraxial in ESRD patients:



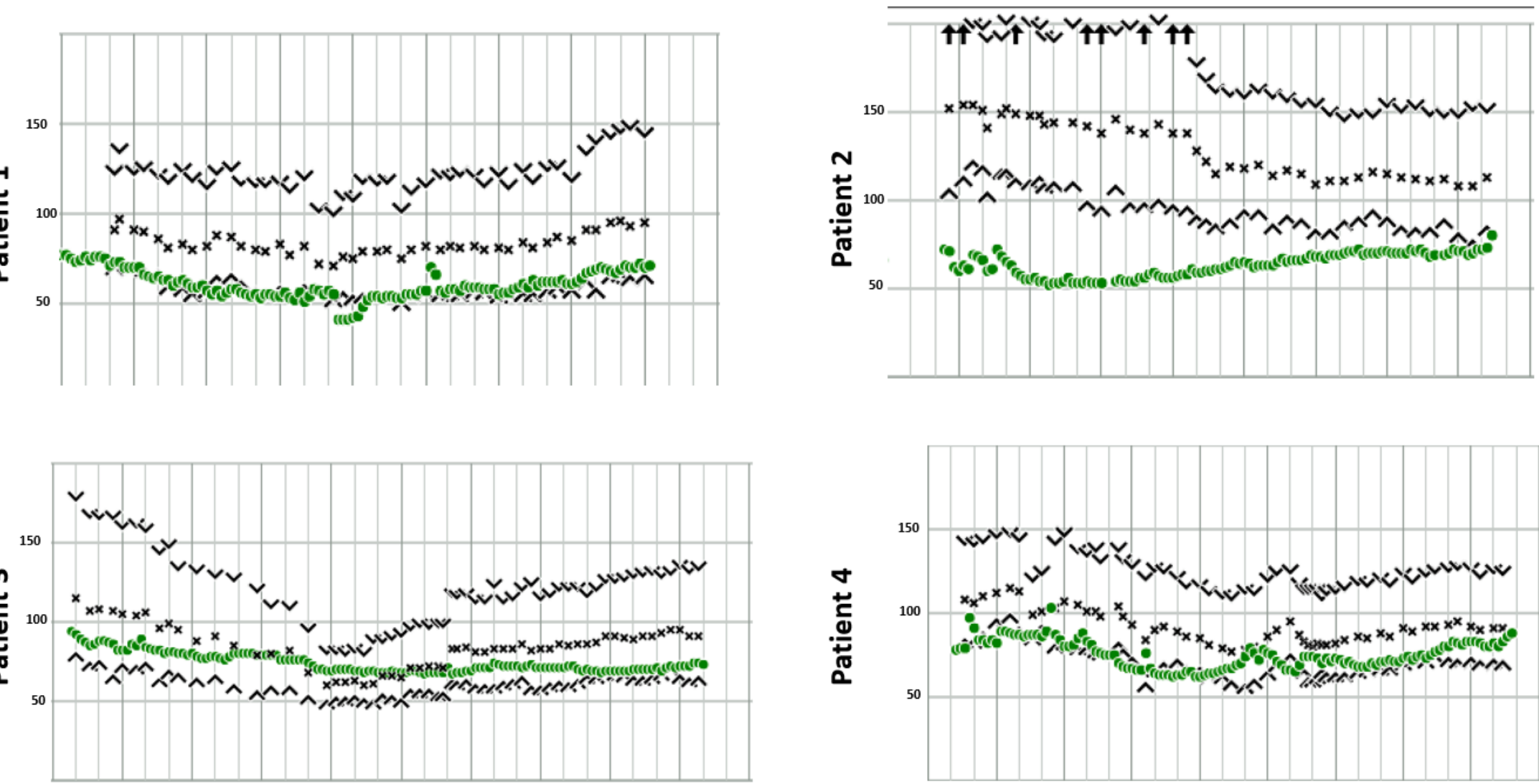
Combatting hypotension:



vasodilation effects of neuraxial anesthesia

ultrafiltration from dialysis, autonomic dysfunction, and inflammatory responses

All four patients maintained stable hemodynamics with careful dosing and fluid management, including those with long-standing hypertension and impaired baroreceptor sensitivity.



Coagulation:



- Presence of bleeding diathesis?
- uremic platelet dysfunction, anemia of chronic disease
 - dialysis improves clot formation and platelet function

Neuraxial anesthesia can be used in these patients while adhering to ASRA anticoagulation guidelines

General anesthesia is typically used for kidney transplantation, but with operative advancements and shorter surgical times, neuraxial anesthesia is a viable option.