MD Anderson Enhanced Recovery In Liver Surgery (ERLS) vs. Traditional Recovery Pathways

TA Aloia, 2015

Table 1. ERLS vs. Traditional Pathway

	Factors	Enhanced Recovery	Traditional
Pre-operative	**Education**	Open and MIS liver surgery patient education material provided, as well as, ER Specific Patient Education material provided includes information about ER principles, patient and care-giver expectations and pain management	Open and MIS liver surgery patient education material provided
	Fluid Management	Saline lock IV in pre-op holding	KVO IV
	Preoperative Fasting	Solids up to 6 hours prior to surgery, clear liquids permissible up to 2hrs before surgery	Clear liquids after lunch day prior to surgery, NPO post midnight
	Bowel State	No mechanical bowel preparation required	Mechanical bowel preparation used selectively
	Preventive Analgesia	Celecoxib 400 mg PO, Pregabalin 75 mg PO (Avoid, Age>65), Tramadol ER 300 mg PO morning of surgery, anxiolytics and anti-nausea medication as needed	Anxiolytics and anti-nausea medication as needed
Intra-operative	**Perioperative Seroids**	Dexamethasone 10mg intravenous on induction of anesthesia	No
	Opioid Sparing Anesthesia	Yes	No
	Intravenous/Inhalational Anesthetics	Dexamethasone 10 mg IV at induction; IV Acetaminophen 1 gram q 6 hours; Propofol as main anesthetic agent; IV Dexmedetomidine; IV Ketamine; IV Lidocaine; Infusions titrated by anesthesiologists per patient as needed	Combined protocol with narcotics and inhalational agents
	Fluid Management	Goal directed: monitor stroke volume	Goal directed: unmonitored
	Regional Analgesia	MIS: Local anesthetic wound infiltration with long-acting liposomal bupivacaine. Open: Epidural preferred over PCA	MIS: Local anesthetic wound infiltration with short-acting lidocaine/bupivacaine. Open: Epidural preferred over PCA
	Drains	Limit to only when absolutely indicated	Selectively used
Post-operative	**Baseline Analgesia**	Yes. Pregabalin 75 mg po BID, start pm POD0 x 48h; Acetaminophen 500 mg po x 1 POD0; Celecoxib 200 mg PO BID, start POD1; Tramadol 50mg PO q6h, start POD1 x 48h; Hydromorphone 0.5 mg IV q 30 minutes prn breakthrough pain not relieved within 30 mins of oxycodone; No PCA unless failure of Epidural	Epidural, PCA hydromorphone, hydrocodone, acetominophen
	PRN Analgesia	Epidural patient: titrated per pain service; Non-epidural patient: Mild pain (1-3): Acetominophen 500 mg PO q6h; Moderate pain (4-6): Tramadol 50 mg PO q6h; Severe pain (7-10): Hydromorphone 0.5 mg q15 min x 2	hydromorphone, tramadol, hydrocodone
	Tubes	No NGT	Selective NGT
	Early Ambulation	Yes. Day of surgery: Sit on edge of bed; POD1 Out of bed to chair and ambulation at least 4 times daily	Yes. Day of surgery: Sit on edge of bed; POD1 Out of bed to chair and selective ambulation at least 4 times daily
	Fluid Management	Hepatobiliary fluid protocol, Minimize IVF rate, SL after 600cc PO	Hepatobiliary fluid protocol, Minimize IVF rate
	Early Oral Intake	Patients allowed clear liquids on day of surgery. Regular diet POD1	NPO with Ice POD0, POD1 clears, ADAT
	Ready for discharge criteria	Formalized: Independently ambulatory, good pain control, tolerating diet, bowel function, no infections, comorbidities under control	Formalized: Independently ambulatory, good pain control, tolerating diet, bowel function, no infections, comorbidities under control

MIS = Minimally invasive surgery, ER = Extended release, KVO = Keep vein open, PRN = as needed

PCA = Patient controlled analgesia, NGT = Nasogastric tube, IVF = Intravenous fluid, SL = Saline lock, ADAT = advance diet as tolerated

THE UNIVERSITY OF TEXAS
MD Anderson Cancer Center