



HERBAL SUPPLEMENTS

Supplement	Perioperative Concern
Ginger	↑ Bleeding risk
Garlic	↑ Bleeding risk
Ginkgo	↑ Bleeding risk
Ginseng	↑ Bleeding risk, Hypoglycemia
Green tea	↑ Bleeding risk
Saw Palmetto	↑ Bleeding risk
Vitamin E	↑ Bleeding risk
Black Cohosh	↑ Bleeding risk, Hepatic injury
Licorice	Aldosterone-like effect (HTN, ↓ K, ↑ Na)
Kava	↑ Sedative effects of anesthesia
Valerian	↑ Sedative effects of anesthesia
St. John's Wort	CYP P450 Induction
Echinacea	Allergic reaction/Anaphylaxis

Herbal supplements should be stopped 1-2 weeks prior to surgery
If the supplement starts with "G", then it ↑ bleeding risk

BIS MONITORING

Wave & Range	BIS & Description
Gamma (26-80 Hz)	BIS >85 (Awake)
Beta (13-25 Hz)	
Alpha (9-12 Hz)	BIS 65-84 (Sedation, Resting with eyes closed)
Theta (5-8 Hz)	Not prominent in adults
Delta (1-4 Hz)	BIS 40-64 (Surgical anesthesia, Deep sleep)
Slow (<1 Hz)	BIS <40 (Isoelectric, possible burst suppression)

1°C ↓ in body temperature → BIS ↓ ~1 unit
Burst suppression = alternating episodes of isoelectricity & active oscillations

GLASCOW COMA SCALE (GCS)

Score	Eye Opening	Verbal	Motor
1	No Response	No Response	No Response
2	Painful Stimuli	Incomprehensible	Extends to pain
3	Voice	Inappropriate	Flexes to pain
4	Spontaneously	Confused	Withdraws to pain
5	-	Appropriate	Localizes pain
6	-	-	Follow commands

15 = Awake/normal state ≤8 = Coma (intubation required)

IV FLUID COMPOSITION

Fluid	Osmolality (mOsm/kg)	Na ⁺ (mEq/L)	Cl ⁻ (mEq/L)	K ⁺ (mEq/L)	Ca ²⁺ (mEq/L)	Mg ²⁺ (mEq/L)	Glucose (g/L)	Lactate
Plasma	289	140	103	5	5	2	-	1
Plasmalyte	294	140	98	5	-	3	-	-
LR	273	130	109	4	3	-	-	28
0.9% NS	308	154	154	-	-	-	-	-
0.45% NS	154	77	77	-	-	-	-	-
3% NS	1026	513	513	-	-	-	-	-
D5W	253	-	-	-	-	-	50	-
D5LR	525	130	109	4	3	-	50	28
D5NS	560	154	154	-	-	-	50	-
D5½NS	406	77	77	-	-	-	50	-
Albumin	300	145	-	-	-	-	-	-

Plasmalyte also contains Gluconate (23 mEq/L) and Acetate (27 mEq/L)
Lactate in LR is converted by pyruvate in the liver to bicarb via citric acid cycle

TEG/ROTEM

Value	Measures	Normal Range	Treatment
R Time to start clot formation	Clotting factors ↑ R = ↓ Clotting Factors	<6 min	FFP
K Time until clot reaches fixed strength	Fibrinogen ↑ K = ↓ Fibrinogen	1-3 min	Cryoprecipitate
α angle Rate of fibrin accumulation	Fibrinogen	<60°	Cryoprecipitate
Maximum Amplitude (MA) Clot strength	Platelet ↓ MA = ↓ Platelets	>60 mm	Platelets and/or DDAVP
Lysis at 30 minutes (LY30) % amplitude reduction 30 mins after MA	Clot Stability ↑ LY30 = Excess Fibrinolysis	<6%	Anti-fibrinolytic (TXA or ACA)

FFP = fresh frozen plasma
DDAVP = desmopressin
TXA = tranexamic acid
ACA = aminocaproic acid

PARALYTIC INTERACTION

	Succinylcholine Phase I Block	Succinylcholine Phase II Block	Rocuronium
Typical dosing / Infusion duration	<3 mg/kg / <30 min	>3-5 mg/kg / >30 min	-
Administration of Rocuronium	Antagonize	Potentiate	Potentiate
Administration of Succinylcholine	Potentiate	Potentiate	Antagonize
Administration of Neostigmine	Potentiate	Antagonize	Antagonize
TOF ratio	> 0.7	< 0.3	< 0.3
Response to tetanus	Sustained	Fade	Fade
Post-tetanic facilitation	No	Yes	Yes

TOF > 0.9 = full recovery (approximated with tetany)
TOF < 0.3 = adequate surgical relaxation (approximated with Double Burst Stimulation [DBS])
Neostigmine dose = 0.07 mg/kg or 5mg (whichever is smaller)
Butyrylcholinesterase deficiency → Succinylcholine Phase II Block
Reversal of Succinylcholine apnea = ≤ 0.03 mg/kg Neostigmine