ACUTE SPINAL CORD INJURY
HEMODYNAMIC MANAGEMENT ALGORITHM

0 INITIAL NEUROLOGIC ASSESSSMENT

Perform and document baseline neurologic exam

- Motor exam using standardized 0-5 grading
- Sensory level
- Symmetry / asymmetry

- Rectal tone / voluntary contraction when appropriate

Repeat neurologic examinations daily and after major interventions or clinical change.

STANDARDIZED MOTOR STRENGTH SCORING

SCORE	FINDING
0	No muscle activation
1	Trace muscle activation, such as a twitch, without recieving full range of motion
2	Muscle activation with gravity eliminated, achieving full range of motion
3	Muscle activation against gravity, full range of motion
4	Muscle activation against some resistance, full range of motion
5	Muscle activation against examiner's full resistance, full range of motion

1 INITIAL HEMODYNAMIC MANAGEMENT

Avoid hypotension in all acute SCI patients

2 ASSESS RISK PROFILE

LOWER-RISK PATIENT

- No significant cardiac disease
- Minimal vasopressor requirement
- No evidence of ischemia / arrhythmia

HIGHER-RISK PATIENT

- Significant cardiac disease
- Arrhythmia / ischemia / troponin elevation
- Heart failure / pulmonary edema
- Frailty / advanced age
- Escalating vasopressor requirement

3A MAP STRATEGY: LOWER-RISK PATIENTS

Target MAP ≥ 75 mmHg

- Avoid excessive augmentation beyond physiologic range
- Reassess daily
- Typical duration: 3-5 days based on neurologic trajectory and vasopressor burden

3B MAP STRATEGY: HIGHER-RISK PATIENTS

- Prioritize avoidance of hypotension
- Reassess whether aggressive MAP augmentation is warranted based on individualized neurologic benefit vs cardiopulmonary risk
- Early multidisciplinary discussion recommended

4 DAILY REASSESMENT

CONTINUE HEMODYNAMIC SUPPORT IF:

- Neurologic benefit remains plausible
- Pressor burdern acceptable
- No significant cardiopulmonary complications

CONSIDER DE-ESCALATION IF:

- Arrhythmia
- Myocardial ischemia / troponin rise
- Heart failure / pulmonary edema
- Escalating vasopressor requirements
- Risk outweighs anticipated neurologic benefit

INSTITUTIONAL PRINCIPLE

Avoid hypotension while individualizing MAP augmentation strategies based on patient-specific risk-benefit assessment.

SCI = spinal cord injury | MAP = mean arterial pressure | ICU = intensive care unit