UAMS MEDICAL CENTER

ACS SERVICES MANUAL

SUBJECT: Management of Traumatic Spinal Cord Injury **PAGE:** 1 of 2

UPDATED: 1/2023 **EFFECTIVE:** 2/9/2023

RECOMMENDATION(S): David Bumpass, MD **APPROVAL:** 11/30/2018
CONCURRENCE(S): Benjamin Davis, MD

DEVIATIONS: We recognize that not all cases are the same. Deviations from these standards require attending involvement and preferably discussions.

INCLUSIONS: Trauma patients presenting to the UAMS with known/suspected spinal cord injury (SCI).

EXCLUSIONS: Multi-injured patients with ongoing or uncontrolled bleeding – to be determined by trauma attending.

CONSULTATION: Spine team shall be notified immediately as soon as SCI is *suspected* based on history or physical exam.

DISPOSTION:

- SCI patient must be transferred to SICU ASAP unless that interferes with obtaining MRI, in which case the patient should proceed to SICU from MRI whenever possible
- Q1 hour neurologic assessments while in the SICU
- SCI Patient to remain in SICU until the beginning of the day after pressor therapy stopped

IMAGING:

- STAT MRI shall be ordered on all patients with known/suspected SCI.
- Trauma chief or designee (trauma or ED resident) must place order for MRI, call radiology resident AND MRI tech immediately – alert them that patient has suspected spinal cord injury
    - Radiology Resident: 501-296-1095
    - MRI Tech: 501-686-8405
- Trauma team to evaluate for injuries that contra-indicate transport to MRI
- Do not go to MRI before MAP parameters met

BLOOD PRESSURE MANAGEMENT:

- MAP GOAL: ≥85 mmHg starting in the ED
    - Pressor therapy to be started after trauma attending is reasonably certain the patient is not bleeding
- ARTERIAL LINE AND CENTRAL VENOUS LINE to be placed by trauma team in ED
    - May begin pressor therapy *while lines are being placed* via peripheral line
    - Central access may be deferred at discretion of trauma attending
- FIRST LINE PRESSOR THERAPY: norepinephrine
    - Substitute phenylephrine if known or suspected history of cardiac arrhythmia
- MAP ≥85 mmHg to be maintained until one of the following occurs:
    - Neurological exam remains unchanged from baseline 24-hours after surgical decompression
    - Neurological exam "plateaus' - remains unchanged for any 24-hour period after decompression
    - Neurological exam to be performed daily by spine ATTENDING and results/recommendations regarding cessation of pressor therapy communicated to SICU
- Whenever practical and safe, cessation of pressor therapy should occur before noon on the day the decision is made to allow adequate monitoring of neurological status

These guidelines were prepared by the UAMS ACS Division. They are intended to serve only as a guideline based on current review of the medical literature and practice. They are neither policies nor protocols. Their use is at the discretion of the managing physician.

IDEAL TIMING OF SURGICAL DECOMPRESSION/STABILIZATION:

- Cervical SCI should *ideally* be decompressed/stabilized within 24 hours of presentation to UAMS
- Thoracolumbar spinal cord injuries should be stabilized within 72 hours of presentation to UAMS
- For SCI, operative plan should be communicated to the trauma team within 12 hours of presentation, contingent on availability of all necessary data and imaging
- FINAL recommendations for orthotics or further imaging should be made at that time

STEROID THERAPY:

- Steroids are not a standard component of traumatic SCI at UAMS.
- Initiation of steroid therapy should occur only after a discussion between spine and SICU and/or trauma attending.
    - Typical candidates will be pts < 30 years of age with isolated C5 and higher injuries

THROMBOPROPHYLAXIS:

- Pharmacologic thromboprophylaxis should start 24 hours after surgical decompression
    - Hold thromboprophylaxis for the following reasons:
        - excessive drain output (determined by spine team, communicated to SICU/trauma)
        - neurologic deterioration
        - other contraindications to be discussed between spine and SICU/trauma

TRANSFUSION GUIDELINES:

- Goal hemoglobin is 8g/dl for the duration of the inpatient admission
- Transfusion of platelets, FFP, and cryoprecipitate shall be ROTEM-guided
    - Exceptions per discussions with attendings in time-sensitive situations

REFERENCES:

1. American College of Surgeons TQP Best Practice Guidelines https://www.facs.org/quality-programs/trauma/quality/best-practices-guidelines/ (March 2022)
2. Como, et al. Cervical Spine Injuries Following Trauma. J Trauma. 67 (3): 651-9, Sep 2009
3. Fehlings, et al. Early versus Delayed Decompression for Traumatic Cervical Spinal Cord Injury: Results of the Surgical Timing in Acute Spinal Cord Injury Study (STASCIS). PloSONE. 7(2). E32307. February 2013.
4. Readdy, et al. Complications and outcomes of vasopressor usage in acute traumatic central cord syndrome. J Neurosurg Spine. 23: 574-580, 2015
5. Saddeh, et al. The impact of blood pressure management after spinal cord injury: a systematic review of the literature. Neurosurg Focus. 43 (5):E20, 2017
6. Kong, et al. A prospective evaluation of hemodynamic management in acute spinal cord injury patients. Spinal Cord 51. 466-471. 2013.
7. Fehlings, et al. A Clinical Practice Guideline for the Management of Patients with Acute Spinal Cord Injury: Recommendations on the Type and Timing of Anticoagulant Thromboprophylaxis. Global Spine Journal. 7(3S) 212S-220S, 2017.
8. Kerwin, et al. The Effect of Early Spine Fixation on Non-Neurologic Outcome. J Trauma. 58: 15-21. 2005
9. Bracken MB. Steroids for acute spinal cord injury. Cochrane Database Syst Rev. 2012; 1: CD001046

These guidelines were prepared by the UAMS ACS Division. They are intended to serve only as a guideline based on current review of the medical literature and practice. They are neither policies nor protocols. Their use is at the discretion of the managing physician.