Spinal Cord Injury:
ICU
Associated Power Plans: PICU Acute Spinal Cord Injury Admission

Children's Mercy KANSAS CITY | Evidence Based Practice

Priorities:
- ***Stabilize*** vital signs
- ***Support*** airway
- ***Maintain*** total spine precautions
- ***Monitor*** for autonomic dysreflexia

🚨 ***This is a medical emergency- act fast!***

Intensive Care Unit
Management of SCI patient

QR code for mobile view

ICU management begins with the following concurrent tasks

Cardiovascular Care
- ***Place***
  - Arterial line for all SCI patients ***-and-***
  - Central venous line for patients with cervical and/or thoracic level injury at time of ICU admission
- ***Maintain*** mean arterial pressure (MAP) for initial 72 hours following SC injury
  - **Norepinephrine** is the preferred agent for SCI patients
  - Consider phenylephrine if arrythmias presents
- ***Initiate*** limited trial of volume expansion with isotonic fluids (hemodynamic management), *if not already received*

Respiratory Care
- ***Individualize*** airway support dependent on level of injury
- ***Evaluate*** need for additional support and monitoring of non-intubated patients with cervical through thoracic injuries
  - Consider early initiation of airway clearance therapies
  - CO_2 monitoring
    -and/or-
    - Forced Vital Capacity (FVC) ***-and-***
    - Max negative inspiratory force (NIF)

Neurologic Care/Spinal Cord Management
- ***Identify*** treatment priorities for traumatic brain injury (TBI) and SCI management if patient has TBI and SCI
- ***Obtain*** MRI within 24 hours of injury for surgical planning if not completed prior to admission
- ***Clarify*** spine precautions ~~within 48 hours~~ after completion of imaging - Spine service will clear precautions when appropriate and update precaution orders

Spine Stabilization Guidance

- ***Within 24 hours***
  - Spine surgeon on call will determine need/plan for spine surgery for decompression and stabilization
  - Begin wound care:
    - Provide cervical collar padding and assess every shift
    - Turn patient every 2 hours (side-side-back)
    - Order special mattress if needed
- ***Next calendar day after admit*** - complete identification, clearance, and treatment of other injuries not previously identified and document in EMR
- ***At 72 hours*** - begin to re-evaluate the duration of monitoring blood pressure goals and vasopressor support

Minimum MAP Goals

Age	Target MAP
Term - 12 mo	55 - 75 mmHg
1 - 15 yrs	70 - 90 mmHg
16 - 18 yrs	>85 mmHg

Consults

All patients
- Nutrition to establish nutritional goals ***within 24 hours*** of admission
- Rehab consult and completion of International Standards for Neurological Classification of Spinal Cord Injury (ISNCSCI) scoring ***within 24 - 72 hours*** of admission
- Social Work
- PT/OT for contracture prevention (PRAFOs), resting hand splints, and swallow evaluation - *depending on level of injury*

Conditional
- Neuropsychology for all patients with deficits due to SCI or concurrent TBI
- ENT to evaluate for tracheostomy *if unable to separate from ventilatory support*
- Pulmonology for ventilated patients and those with cervical or thoracic SCI
- Speech Therapy for communication needs

Maintenance and Preventative Care

Bowel and Bladder
- ***Initiate*** bowel program per and maintain goals for bladder management per the Neurocritical Care SCI handbook
- ***Transition*** from foley to clean intermittent catheterization (q 3-4 hrs) following resolution of shock (and diuresis if indicated)

Orthostasis Management
- ***Consider*** graded compression stockings, abdominal binder
- ***Progress*** head of bed elevation

Wound Care
- ***Continue*** turning patient every 2 hours
- ***Assess*** every shift - cervical collar padding

Early Mobilization
- ***Update*** activity restrictions in PT/OT orders as appropriate
- ***Determine*** bracing needs

DVT prophylaxis
- ***Provide*** mechanical prophylaxis to all SCI patients *(if cleared by Ortho and Trauma surgeons)*
- ***Discuss*** initiation of chemical prophylaxis within 72 hours of injury
- ***Refer*** to Anticoagulation Therapies and VTE Risk Assessment Clinical Pathway

Transfer to Med/Surg Unit prior to inpatient rehabilitation service
See Med/Surg Unit and Rehabilitation algorithm

Contact: EvidenceBasedPractice @cmh.edu

Link to: synopsis and references

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