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Summary: Patients with Spinal Cord Injuries in the ED

- **MSK:** osteoporosis, fracture management
- **Neurologic:** baclofen withdrawal, baclofen toxicity, charcot arthropathy
- **Cardiac:** autonomic dysreflexia, CVD
- **Vascular:** DVT, PE
- **Respiratory:** hypoxia, CAP, ventilation strategies
- **Gastrointestinal:** neurogenic bowel, abdominal pathology
- **Urologic:** neurogenic bladder, AKI, UTI
- **Dermatologic:** pressure ulcers
- **Psychiatric:** suicidal ideation, pain sensation, opioid strategies

Autonomic Dysreflexia
- Headache
- Facial flushing
- Nasal congestion
- Diaphoresis above SCI level
- Blurry vision
- Anxiety

↑ **SBP > 40mmHg** above baseline
↑ **DBP > 20mmHg** above baseline
Random SBP > 150mmHg

Autonomic Dysreflexia Treatment

Check BP q5min

NON-Pharmacological Treatment
(Level 5 evidence)
- Sit the patient up
- Remove all tight clothing
- Recognize and Reverse possible underlying causes EARLY
  1. Drain bladder w/ foley (lidocaine)
  2. Manual bowel disimpaction
  3. Look for other causes

If SBP still > 150

Pharmacological Treatment
- ***Nitrates*** *(Level 5 evidence)*
- ***Nifedipine*** *(Level 2 evidence)*
- ***Captopril*** *(Level 4 evidence)*
- ***Hydralazine*** *(Level 5 evidence)*
- ***Sodium nitroprusside***
- ~~Prazosin~~
- ~~Prostaglandin E2~~
- ~~Sildenafil~~
- ~~Beta-blockers~~

MSK: osteoporosis, fracture management
- Osteoporosis is common = #s even with minor trauma
- Distal femur #, proximal tibia # most frequent
- Bivalve casts & use extra padding to prevent compartment syndrome & pressure ulcers
- Talk to your local orthopedic surgeon about VTE prophylaxis (LMWH is recommended)

Neurologic: baclofen withdrawal, baclofen toxicity, charcot arthropathy
- Baclofen pump malfunction is a physiatry emergency!
- Baclofen withdrawal requires supportive care, GABA agonists (benzos, propofol, +/- cyproheptadine), seizure prophylaxis
- Baclofen toxicity requires supportive care, early intubation, seizure prophylaxis
- Spinal charcot arthropathy can present with crepitus, clunk on transfer, sitting imbalance, increased spasticity

Cardiac: autonomic dysreflexia, CVD
- Autonomic dysreflexia should be treated with non-pharmacologic and pharmacologic agents
- Remove underlying noxious stimuli
- Avoid nitrates if on PDE-5 inhibitors

Vascular: DVT, PE
- Higher risk in paraplegic than quadriplegic patients
- Well's, PERC clinical decision tools should be used very carefully

Respiratory: hypoxia, CAP, ventilation strategies
- Understand how to manage hypoxia NYD in spinal cord injury patients – consider assisted coughs
- Pneumonia is #1 cause of ED visits and mortality (quadriplegic patients are 150x higher risk) due to underlying respiratory physiology
- Pseudomonas is common in SCI patients! American Thoracic Society & IDSA guidelines say consider empiric coverage (Piperacillin-Tazobactam 4.5g IV Q6H, Meropenem 1g IV Q8H) in patients who are high-risk of Pseudomonas

Gastrointestinal: neurogenic bowel, abdominal pathology
- No difference in abdominal pathology, but atypical presentations (most common symptom in appendicitis is anorexia)
- Neurogenic bowel can be managed with proper manual disimpaction

Urologic: neurogenic bladder, AKI, UTI
- Understand patients have different methods of managing neurogenic bladder at home (forced Valsalva, clean intermittent catheterization, chronic indwelling foley, suprapubic catheters)
- Bladder colonization is very common, so Canadian Urology guidelines require **bacteriuria or leukocyturia (>100 WBC/cc) + UTI symptoms** to diagnose urinary tract infection
- Multi-drug resistant organisms are common: E. Coli (less common than rest of the population), Pseudomonas, Klebsiella, Enterococcus, Acinetobacter, Candida

Common UTI sx in SCI:
- **Spasticity**
- **Catheter blockage**
- **Cloudy urine**
- **Overflow / leaking around catheter**
- Fever
- Rigors / chills
- Sweating
- **AD (autonomic dysreflexia)**

Dermatologic: pressure ulcers
- Pressure ulcers can cause sepsis, autonomic dysreflexia
- ED flow consideration: Patients should be moved to pressure-reducing mattress from the ED within 2 hours
- Or patients require turns q2h

Psychiatric: suicidal ideation, pain sensation, opioid strategies
- Suicidal ideation is most common in first 5 years post-SCI, after >5 years suicidal ideation similar to the rest of the population
- Patients may have higher opioid requirements due to chronic pain, but careful with baseline OSA, restrictive lung disease
- Patients should still get procedural sedation to prevent Autonomic Dysreflexia, even if they tell you they can't feel pain