Nursing Management of Patients with Trauma Cheat Sheet

by Maria K (mkravatz) via cheatography.com/71404/cs/18137/

Trauma Centers

Level 1: *comprehensive care for any need r/t injury; prevention & research*

Level 2: *can provide care for all injured pts, many of same types of care but often on-call; prevention, no research*

Level 3: *prompt assessment , resuscitation, surgery if needed, stabilize pt; contract w/ another hospital*

Level 4: *(ED) staff have ACLS, stabilize & transfer; can do mild trauma*

Level 5: *evaluate, stabilize, transfer*

Mechanisms of Injury

Radiation	Electrical	Thermal
Chemical	Mechanical	Motion

Motion: car damage helps w/ body damage
Rapid fwd decel - organs on body on tree
Head-on collision - front impact, windshield, steering wheel, dashboard
Dashboard - knee, long-bone, C-spine, pelvis
T-bone - side of body, rib fx from console
Rollover - depends, thrown if no seat belt
Airbags - put seat back as far as possible

Diagnostic Studies

Radiological tests

Diagnostic perineal lavage (now - US)

Labs - ABGs, CBC, coagulation studies (r/t DIC), serum electrolytes

Glucose (r/t stress response)

UA on all trauma pts (tox & pregnancy)

Blood type & screen (transfusion)

Initial Assessment & Management

MAIN GOAL: *minimize time from initial insult to definitive care, optimize pre-hospital care*

Want them to be there within 1 hr of injury

Primary Survey - often in ER, find injuries

Initial Assessment & Management (cont)

- **A** irway
- **B** reathing *(pain, pattern)*
- **C** irculation *(hypovolemic shock common)*
- **D** isability *(LOC, >length w/o consciousness = >disability - Glasgow Coma Scale)*
- **E** xposure *(anything we're missing?)*

Resuscitation Phase

Crystalloids *(isotonic)* → **Colloids** *(large molecules)* → **Blood** *(O-, T&C, type)*

Secondary Survey - History, AMPLE

- **A** llergies
- **M** edications
- **P** MH
- **L** ast meal - *(dec. aspiration risk)*
- **E** vents preceeding

Also: examine body, indwelling cath (I&O), NGT (decompress stomach), special prodecures (WKG, XR, CT)

Operative Phase

- Must be as stable as possible

Critical Care Phase - ICU

- Close intensive care, frequent assessments
- IV lines & fluids
- Ventilator

Carotid + = SBP >60 / **Femoral +** = SBP >70
Radial + = SBP >80

Chest Trauma

Penetrating or blunt
Children have more pliable chests (cartilage)

Types:
- Myocardial or pulm. contusion
- Rib fx
- Flail chest
- Cardiac tamponade
- Pneumothorax
- Hemothorax

Myocardial/Pulmonary Contusion

Myocardial/Pulmonary Contusion (cont)

Management - ABC(DE)

Pain on breathing → risk for - pneumonia, hypercapnic, hypoxic
May also see rib fx

Rib Fractures

Common injury usually due to blunt trauma - Ribs 4-9 most common, 1-3 take sig. force

Risk for - ARDS

Assessment - hypoventilating → hypoxia hypercapnia

Management - treat pain to prevent ARDS, can get up, move, breathe

Flail Chest

Multiple rib fx, part disconnected (3+) {nl}} - Often unilateral, r/t blunt chest trauma

Paradoxical breathing: flail part floats w/ breathing

Risk for - ARDS

Assessment - hypoventilating = hypoxia, hypercapnia

Management - ventillator, PEEP

Cardiac Tamponade

Fluid accumulation in pericardium → dec. CO

Assessment - **Beck's Triad** *(muffled heart sounds, JVD, hypotension*

Management - supportive, O_2, pericardiocentesis

Heart won't move if 200-300 mL!

Pneumothorax

Injury in which air enters pleural space, usually r/t blunt trauma

Open (openning in chest cavity) vs. **closed**

Assessment

Management - chest tube, pain control, O_2

GOAL: *dec. + pressure & restore - pressure*

Patho - trauma to lung → injury → air enters → lung collapses → alveoli collapse → atelectasis → V/Q mismatch → hypoxia

Myocardial contusion: *bruising to heart; R side most common*
- Dec. contractility → dec. CO

Assessment - c/o CP, SOB

Pulmonary contusion: *bruising to lungs*
- Most common chest injury

Assessment - erythema, bruising on outside, pain w/ breathing

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Tension Pneumothorax

Life-threatening complication usually r/t blunt chest trauma (pneumothorax)
- Can quickly be fatal if not detected, treated

Assessment - deviation of everything to unaffected side (trachea); diminished lung sounds, cyanosis, JVD, hypotensive

Management - Release air!

Hemothorax

Usually due to blunt chest trauama or penetrating injury

Simple (1500 mL) or **massive** (3000 mL)

Assessment - dec. breath sounds, hypoxia; percuss = dull on affected side *(may have total of 3 L buildup per side)*

Management - chest tube or surgery

Diagnostic Findings

CXR	fracture, hemo- or pneumothorax
ABG's	hypoxemic, acid-base imbalance
EKG	hypoxemia → arrythmias
CBC	serial CBC's q6h to determine bleeding, something else

Chest Trauama Management

GOAL: prevent respiratory compromise & complications

Airway

Hemo - replace blood

Chest tube insertion

Check dressing around CT for erythema

IVF & blood replacement

OR depending on severity

No vent → cough, deep breathe (ARDS!), ICS

Splint if rib fx

Pain - nerve block

Abdominal Trauma

Injury blunt or penetrating

Massive blood loss/shock → & not know until severe retroperitoneal

Assessment - s/s may vary greatly, REASSESS!

Pain

Wounds & abrasions

Bruising

Bowel sounds

Balance signs

Kehr's sign: *acute shoulder pain r/t blood/other irritants in peritoneum when pt is lying & legs elevated* = ruptured spleen

Cullen's sign: *bruising below umbilicus*

Turner's sign: *flank bruising*

Diaphragmatic rupture (hear bowel sounds w/ breath sounds)

Hypovolemia w/ large blood loss

Spleen most commonly damaged!
- Abd. aorta, liver, & hepatic vessels

Bladder rupture from blunt trauma

Knife wound w/ evisceration → sterile saline on organs

Impalement injury → STABILIZE & remove in OR

Diagnostic Studies

X-ray

CT scan - GOLD STANDARD FOR INJURIES

CBC (serial H&H)

WBC - inflammation; abd wounds often dirty = prophylactic antibiotics

Serum glucose

Serum amylase

Liver enzymes

US - bleeding?

~~Peritoneal lavage~~

Abdominal Trauma Management

GOAL: *correct volume deficit, prevent shock & infection*

Prophylactic antibiotics

IVF - crystalloids, colloids, blood

NGT, Foley

All invasive procedures

Try non-narcotic analgesics → no ilieus

Limb Trauma

Types:
- **Strains**: stress injury to muscle at tendon
- **Sprains**: ligament injury
- **Fractures**: break in the bone

Assessment:
Strains & sprains - pain, swelling, tenderness, muscle spasms
Fractures - same + loss of movement, may actually see bone/deformity

Diagnostics - XR (broken bones, visualize structures)

Management - immobilize, RICE
- Compression bandage
- Ice first 24-48 hr, heat to inc. circulation

6 P's of Limb Trauma

CARDIOVASCULAR	NEUROVASCULAR
Pulseless	Paresthesia
Pallor	Paralysis
Polar	
Pain	

Crush Injuries

Blood not circulating

Hypovolemic shock

Paralysis

Erythema - r/t broken blood vessels (= edema) & hard

Damaged body part

Renal dysfunction - rhabdomolysis

Complications of Trauma

Hypermetabolism - NEED 3,000 cal + regular BMR in first 24-48 hr
- Lose diaphragmatic integrity = won't get off vent, bacteria migrate = VAP
- Promotes healing: inc. permeability of bowel = easier for bacteria to enter blood (infection, sepsis)

Infection - antobiotics prophylactically; seen in first 3 days, may be septic

Sepsis - debride often

Rhabdomyolysis - tissue breakdown → myoglobin released → AKI → renal failure
- Dark, tea-colored urine
- Generalized weakness, muscle stiffness
- Treatment: IVF to clean out kidneys & lg molecules to dec. kidney damage

Multiple organ system dysfunction (MODS)

PULMONARY

Respiratory failure - risk of ARDS

Pulmonary embolism - r/t damages, DIC

Fat embolism syndrome - long bone break = high risk
- Affects clotting system, thrombocytopenia

Pain - always an issue

More Complications of Trauma

GASTROINTESTINAL

Hemorrhage

Acalculous cholecystitis

RENAL

Renal failure

Myoglobinuria

VASCULAR

Compartment syndrome - inc. pressure in confined space = restricts blood flow = area tense, swollen, no pulse → fasciotomy
- *Experienced pain out of proportion with what you would expect*

Venous thromboembolism

Hypotension

Elderly - other comorbidities make recovery difficult

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