

Lecture 6

Multiple Trauma in ICU

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تحديث من خلال

Multiple trauma

- Is a severe ,life-threatening injuries to multiple body parts.
- Requiring intensive care due to complications like bleeding ,organ damage ,or brain injury.
- Patients with multiple trauma in the ICU have risks such as organ failure(especially respiratory),sepsis ,and ICU-acquired weakness.



Causes of multiple trauma

- 1) Motor vehicle accidents :The most common cause.
- 2) Falls :A frequent cause of traumatic injuries.
- 3) Penetrating injuries :Such as gunshot wounds or stab wounds.
- 4) Violent events :Including attacks or explosions.

**Multiple trauma involving both the chest and abdomen
(thoracoabdominal) trauma .**

Chest trauma in the ICU involves managing life-threatening injuries to the chest wall ,lungs ,heart ,and major blood vessels.

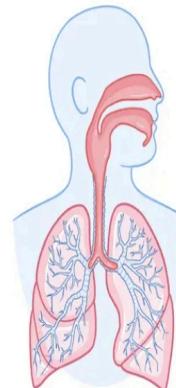
Care focuses on immediate stabilization ,respiratory support ,pain management ,and monitoring for complications.



* immediate stabilization focusing on **ABCDE** approach .

TRAUMA ASSESSMENT

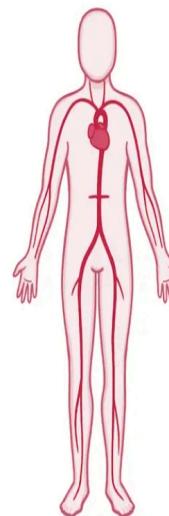
AIRWAY



BREATHING



CIRCULATION



DISABILITY

~ GLASGOW COMA SCALE



EXPOSURE



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Chest trauma management in the ICU

1) **Respiratory support**

* intubation and placed on mechanical ventilation to manage breathing difficulties caused by injuries like pneumothorax ,pulmonary contusions , and rib fractures. " Non-invasive methods like CPAP may also be used ".

2) **Managing hemorrhage, hypovolemic shock, other injuries or fractures.**



3) **Draining and fixation:**

***Chest tubes** are frequently used to manage hemothorax and pneumothorax.

***Surgical intervention** may be necessary for certain injuries ,sometimes using minimally invasive techniques like VATS(Video-Assisted Thoracoscopic Surgery.)

4) **Pain management** :Adequate pain control for patients with chest trauma to allow for proper breathing and prevent complications like pneumonia.

5) **Potential for complications** :pneumonia ,ARDS(Acute Respiratory Distress Syndrome ,)and MODS(Multiple Organ Dysfunction Syndrome.)

All patients undergo initial trauma assessment following protocols with imaging like CT scans used to determine the extent of injuries.



Types of Chest Injuries in the ICU

- 1] **Pneumothorax and hemothorax** :Air(pneumothorax)or blood (hemothorax)trapped in the pleural space ,which compress the lung.
- 2] **A tension pneumothorax** is an immediate medical emergency.
- 3] **Flail chest** :Multiple rib fractures in two or more places ,causing a segment of the chest wall to move independently of the rest of the rib cage lead to impairs breathing (severe trauma).
- 4] **Pulmonary contusion** :Bruising of the lung tissue that can impair oxygenation. "It can worsen over the first 24–48 hours ".
- 5] **Cardiac tamponade** :Fluid or blood accumulating in the pericardial sac compressing the heart and impairing its function.
- 6] **Aortic and vascular injuries** :Damage to the major blood vessels ,which can cause massive bleeding.



Spinal cord injuries(SCI)in the ICU require immediate ,specialized care to stabilize the patient , prevent further damage ,and manage life-threatening complications.



Goals for spinal cord injury management

* **Surgical intervention** :The primary goal is to relieve pressure on the spinal cord and repair any associated injuries.

Early decompression surgery is often necessary .

* **Respiratory support** :Injuries high on the spinal cord(especially between C1 and C4)can impair diaphragm function and lead to respiratory failure , sometimes requiring mechanical ventilation or a tracheostomy.

* **Hemodynamic monitoring and support**:

_ Patients are at risk for neurogenic shock ,which can cause a drop in blood pressure and heart rate.

_ Close monitoring of blood pressure is critical in the first seven days ,often managed with medications to maintain a stable blood pressure.



* Medications:

_ Steroids are used to reduce inflammation but they can increase the risk of complications like infection,

* Preventing secondary complications:

_ Venous thromboembolism(VTE):Patients are at high risk for deep vein thrombosis(DVT)and pulmonary embolism(PE.)

_ Infections :Pneumonia is a significant risk ,especially in patients with respiratory impairment.

* Preventing secondary injury:

_ This is a major focus in the ICU.

_ It includes managing blood pressure ,with a target SBP greater than \((100mmHg\)), ensuring good oxygenation ,and avoiding further damage from swelling or inflammation, managing bradycardia ,monitoring respiratory function ,and preventing pressure ulcers.



*** Glycemic control:**

_ Stress from the injury can cause high blood sugar ((hyperglycemia))\\ which can worsen neurological damage so maintaining good glycemic control is important.

*** Autonomic dysreflexia:**

_ Patients with injuries above the T6 level are susceptible to this potentially life-threatening condition characterized by a sudden spike in blood pressure often triggered by a full bladder or other stimuli.

*** Temperature regulation:**

_ Impaired sweating can lead to a loss of temperature control.
_ Warming devices may be needed and warmed fluids should be used for resuscitation.





THANK YOU!



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