

ADVANCED TRAUMA LIFE SUPPORT (ATLS)

Lecture 2 1st course

Dr. Bashar Hadi Alaraji



ATLS PROTOCOL OBJECTIVES:

- A standardized approach to all traumatic patients.
- A comprehensive assessment and management of patients in emergency situation.
- Best utilization of golden hour which lies between life and death after a traumatic event.



ATLS TRIMODAL DEATH

1. Within Seconds to Minutes

- Brainstem injury
- Aortic rupture

2. Within Minutes to Hours (Golden hours)

- Sub dural Hematoma
- Rupture of Liver & Spleen

3. Within Days to Weeks

- Sepsis & MODS



TRAUMA TRIAGE

- Matching the need of your trauma patient to the facilities (Resources) of the hospital

ATLS PROTOCOL

- 1.PRIMARY SURVEY
- 2.RESUSCITATION
- 3.SECONDARY SURVEY
- 4.TERTIARY SURVEY



1. PRIMARY SURVEY



PRIMARY SURVEY

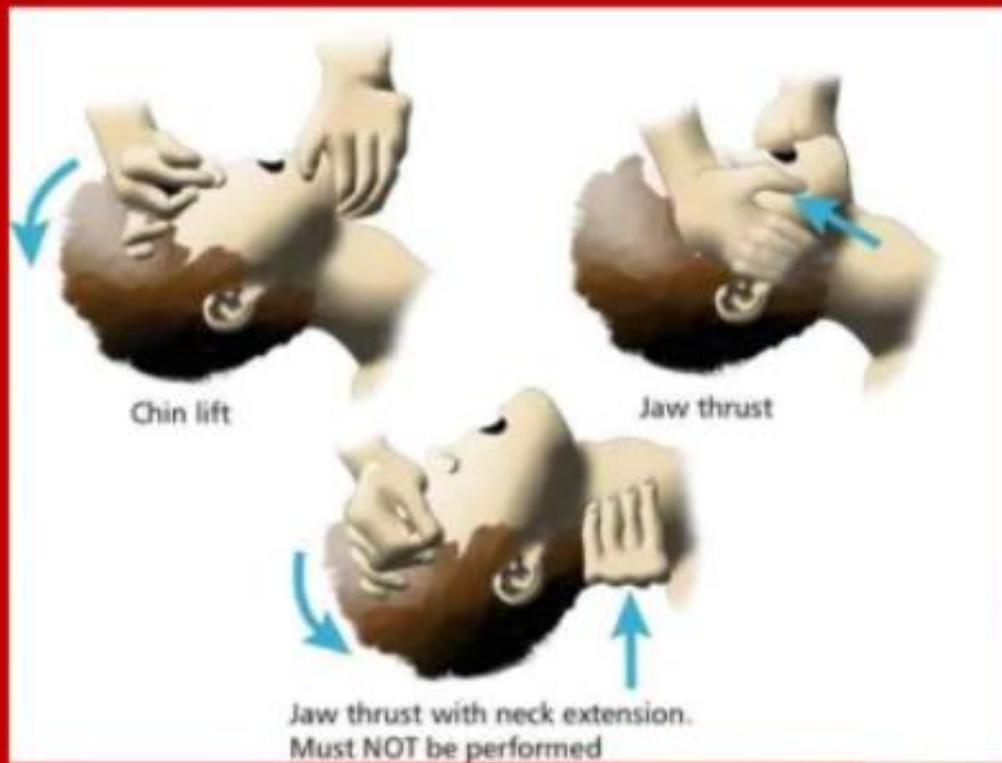
1. **A:** AIRWAY & CERVICAL SPINE IMMOBILIZATION
2. **B:** BREATHING / VENTILATION
3. **C:** CIRCULATION & HEMORRHAGE CONTROL
4. **D:** DISABILITY (NEUROLOGICAL EVALUATION)
5. **E:** EXPOSURE + ENVIRONMENTAL CONTROL



1. AIRWAY & CERVICAL SPINE IMMOBILIZATION

- Chin lift or Jaw Thrust
- Removal of FB, Blood & Vomitus
- ADVANCED METHODS:
 - Endotracheal intubation
 - Cricothyroidotomy
 - Tracheostomy
- PREVENTION OF CERVICAL SPINE INJURY:
 - Immobilize the patient
 - Avoid hyperextension of neck
 - Apply cervical collar





SIGNS OF OBSTRUCTION:

1. Noisy breathing.
2. Respiratory distress.
3. Failure to speak, dysphonia.
4. Cyanosis.
5. Confusion, “universal choking sign”.



CAUSES OR ETIOLOGY OF AIRWAY OBSTRUCTION:

1. Hemorrhage accumulation or secretion within the mouth and oropharynx.
2. Tongue: in an unconscious patient, the tongue may fall into the pharynx and occlude air way.
3. Foreign bodies: food, chewing gum, dentures, dried mucous, etc. many fall undetected into oropharynx.
4. Aspiration of vomits in the chest.
5. Edema of the glottis and oropharynx region.
6. Fracture mandible: the tongue may be fall back and occlude the airway.
7. Fracture maxilla: the soft palate may be fall down on the posterior part of the tongue and cause suffocation.



2. BREATHING AND VENTILATION

- Airway patency doesn't assure adequate ventilation Ô Look for bilateral breath sounds
- Give O2 inhalation
- Check chest wall, lungs & diaphragm by inspection, palpation, percussion & auscultation.



- Look for conditions that impair ventilation
 - ✓ Tension pneumothorax.
 - ✓ Massive hemothorax.
 - ✓ Rib fractures.
 - ✓ Open pneumothorax.
 - ✓ Pulmonary contusion



3. CIRCULATION & HEMORRHAGE CONTROL

Impairment in circulation can lead to shock.so, look for signs of shock such:-

- skin color (pallor)
- narrow pulse pressure
- hypotension
- tachycardia
- level of consciousness
- diminished urine output



1. Control of haemorrhage

- Apply direct pressure
- Pneumatic splinting devices
- Assess the need for surgical intervention

2. Fluid replacement therapy

- double i/v lines should be maintained for Fluid replacement
- adults should be given 2 l bolus fluid (preferred fluid is ringer lactate better if Warm)
- children should be given @ 20ml/kg bolus Fluid

3. 3 for 1 rule

- A rough guideline for the total Amount of crystalloid volume acutely is to replace
- Each ml of blood loss with 3 ml of crystalloid fluid.



4. DISABILITY (NEUROLOGICAL EVALUATION)

- Check the level of consciousness (AVPU/GCS):
 - ✓ A: alert
 - ✓ V: responds to vocal stimuli
 - ✓ P: responds to painful stimuli
 - ✓ U: unresponsive to all stimuli
- Check pupil size & light reaction.
- Check the level of spinal cord injury level



5. EXPOSURE + ENVIRONMENTAL CONTROL

- Undress completely (use trauma scissors).
- Prevent hypothermia (warm blankets & warm fluids).
- Early hemorrhage control.
- Warm room temperature should be maintained.



CARE OVER IN 1RY SURVEY

RATTLE SIGN: Bleeding or ecchymosis behind the ear indicates fracture in the base of the skull or condylar fracture.



CSF LEAKAGE FROM NOSE (RHINORRHEA) OR EAR (OTORRHEA).

1. Handkerchief test

- The material is collected to dry in a handkerchief.
- If starch → mucous.
- If not starch → CSF.

2. Test the collected material for glucose: If it is positive it is C.S.F.



2. SECONDARY SURVEY



SECONDARY SURVEY

Does not begin until the primary survey (ABCDES) is completed, resuscitation efforts are well established & the patient is having normalization of vital signs.it includes:

- Complete history
- Complete head to toe examination
- Reassessment of vital signs
- Complete neurological examination.
- Specific procedures, specific lab. Investigations



COMPLETE HISTORY

1. A: allergies
2. M: medications
3. P: past illness/ pregnancy
4. L: last meal
5. E: events/ environment/mechanism of injury:
 - Blunt trauma: automobile collisions.
 - Penetrating trauma: firearms/stabbing.
 - Thermal injuries: burns/explosions.
 - Hazardous injuries: chemicals/toxins.



PHYSICAL EXAMINATION

1. HEAD
2. MAXILLOFACIAL STRUCTURES
3. CERVICAL SPINE & NECK
4. CHEST
5. ABDOMEN
6. PERINEUM, RECTUM & VAGINA
7. MUSCULOSKELETAL SYSTEM
8. NEUROLOGICAL SYSTEM



3. TERTIARY SURVEY



TERTIARY SURVEY

- Comprehensive Treatment of all Injuries.
- Fracture Stabilization.
- Necessary Operative Intervention.
- Appropriate Intensive Care.
- Rehabilitation.
- Stabilization & Appropriate Transfer.



PANDA EYE (RACCOON EYE):

- Indicate fracture of the base of the skull or zygomatic temporal fracture.
- Appear after 24 hours.



TRAUMA TEAM CONSISTS OF:

1. Orthopedic.
 2. General surgeon.
 3. Neurosurgeon.
 4. Emergency department physician.
- +
5. Maxillofacial surgeon.
 6. Ophthalmologist.
 7. E.N.T Physician.
 8. Anesthetist



THANK YOU

