

# **INITIAL MANAGEMENT OF THE POLYTRAUMA PATIENT**

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## **I. INTRODUCTION**

### **GOALS**

- Understand the patient and the injuries
- Discuss factors in decision making
- Discuss rationale for a priority system in the polytrauma patient

#### A. Trauma Mortality

1. Early Death: Blood loss, brain injury
2. Late Death: Secondary brain injury, sepsis

#### B. Trauma Goals

1. Save a life
2. Save a limb
3. Save a joint
4. Restore function

#### C. Evaluating the Trauma Patient

1. Primary survey
2. ABC's
3. Secondary survey
4. Recognizing orthopedic injuries
5. Prioritizing orthopedic treatments

## **II. SURGICAL DECISION MAKING**

#### A. Broad Categories of Decisions

1. Emergency surgery: performed on patients who are dying
2. Urgent surgery: performed on stable trauma patients
3. Elective surgery

#### B. Tenets of Damage Control

1. Recognize who needs damage control
2. Performed as a salvage operation
3. Need to keep patient alive
4. Accept morbidity of salvage procedures
5. Definitive repair later

#### C. Timing of Fracture Surgery

1. Acute (1-3 hours)
  - i. Decompression of organ cavities
  - ii. Control of thoracic, abdominal, pelvic, cerebral and external bleeding
2. Primary (1-72 hours)

- a. Stabilize pelvic ring
  - b. Open fracture debridement
  - c. Fasciotomies
  - d. Limb salvage vs. amputation
  - e. Long bone fracture treatment vs. stabilization
  - f. Certain articular fractures (e.g., femoral neck, talus)
3. Secondary (3-8 days)
    - a. Secondary wound closure
    - b. Soft tissue reconstruction
    - c. Upper extremity ORIF
    - d. Possible joint reconstructions
  4. Tertiary (>6-8 days)
    - a. Bone grafting
    - b. Complex soft tissue reconstruction
    - c. Definitive closures
    - d. Postponed procedures
- D. Parameters for Definitive Fracture Care
1. Systolic blood pressure >90 mm Hg
  2. Core temperature > 34 degrees C
  3. Urine output >150 ml/hr
  4. Cerebral perfusion pressure >70 mm Hg
  5. PaO<sub>2</sub>:FiO<sub>2</sub> ratio >280
  6. Lactate <2.0 mmol/L
  7. Platelet count >100,000
  8. C-reactive protein <11 mg/dl
  9. Interleukin-6 <500 pg/dl

## **References**

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