

Open fractures

- A 28 year old male patient , victim of RTA , arrived to ER complaining of Right leg pain , wound with sever soft tissue injury as attached in the clinical photo below.



- Define open fracture

- A fracture with an associated break in the skin that is capable of communicating with the fracture and/or its hematoma

- Describe steps of management to be done in ER and steps done in OR

ER :

1. Urgent IV antibiotics & tetanus prophylaxis
2. extremity stabilization
3. Remove gross debris from wound
4. place sterile saline-soaked dressing on wound

OR :

1. Irrigation & Debridement : 3L for type I , 6L for typeII , 9L for type III
2. Temporary fracture stabilization,
3. Local antibiotic administration and
4. Soft tissue coverage

- Describe Gustillo and Anderson classification

Grade	Wound	Contamination	Soft-tissue damage	Bone injury
I	< 1 cm	Clean	Minimal	Simple, minimal comminution
II	> 1 cm	Moderate	Moderate, some muscle	Moderate comminution
IIIA.	> 10 cm	High	Severe with crushing	Soft-tissue cover possible
IIIB.	> 10 cm	High	Severe loss of cover	Requires reconstructive surgery
IIIC.	> 10 cm	High	Vascular injury requires repair	Requires reconstructive

- Clarify antibiotic coverage and tetanus prophylaxis regarding each type of open fracture according to Gustillo

Antibiotics based on Gustilo Classification

	Grade I and II	Grade IIIA, IIIB and IIIC	Special considerations
Antibiotics	1st generation cephalosporin (e.g. cefazolin)	<ol style="list-style-type: none"> 1st generation cephalosporin for gram positive coverage Aminoglycoside (such as gentamicin) for gram negative coverage 	<ol style="list-style-type: none"> Penicillin should be added if concern for anaerobic organism (farm injury) Fluoroquinolones (e.g. ciprofloxacin) should be used for fresh water wounds or salt water wounds (can be used if allergic to cephalosporins or clindamycin) Doxycycline and 3rd or 4th generation cephalosporin (e.g. ceftazidime) can be used for salt water wounds

- What other classification system do you know regarding open fractures ?
- Talk about them

- Ganga hospital classification system (better clarifies type IIIB)
- Mclain modification of gustello for hand open fractures
- Describe each