

1. Regarding hospital disaster response which of the following is **not** recommended
 - a) Increasing surge capacity can be done by doubling patients in rooms, converting a ward to an ICU level unit, using cafeteria as an emergency ward.
 - b) Mobile phone networks may be overwhelmed so plans for two way radios may be needed.
 - c) Media and the press should be allowed to freely talk to medical staff to improve the flow of information for family members
 - d) Decontamination is performed in an area that is outside of the clinical care area of the ED but may be in internal locations.

2. In a disaster, which are triggers for immediate care in simple triage and rapid treatment (START) technique?
 - a) The patient is not breathing despite airway manoeuvres
 - b) Respiratory rate is >30 per min
 - c) Radial pulse is not present
 - d) Patient cannot follow commands

3. Regarding the four coloured triage system in disasters, which is correctly triaged
 - a) Red: patient in septic shock
 - b) Black: patient has burns involving 95% of body surface area
 - c) Yellow: patient is unlikely to deteriorate for several hours
 - d) Green: The injury has systemic implications but patient is not yet in life threatening condition

4. Which is **false** of blast injuries on the cardiopulmonary system?
 - a) Pulmonary barotrauma is the most common fatal primary blast injury
 - b) Pulmonary air and fat embolism is a well-recognized consequence of blast injury
 - c) Tidal volumes should be kept at 6-7 ml/kg if patients are intubated
 - d) Survivors of pulmonary blast injuries have years of long term pulmonary complaints

5. Regarding blast injuries
 - a) Patients with isolated tympanic membrane perforation and no other obvious injuries should receive a chest xray
 - b) Air is a poor conductor of blast wave energy so abdominal injuries are uncommon even if patient is situated near the explosion
 - c) Skull xrays are no substitute for CT brain when identifying occult shrapnel wounds to the head
 - d) CT scans should be used liberally as they can identify majority of injuries

6. Which of the following occurs with crush syndrome
- Hypercalcaemia
 - Metabolic alkalosis
 - Renal failure due to high CK
 - Myoglobin can be indirectly nephrotoxic
7. Which is **false** about compartment syndrome?
- Can be caused by compartment pressures > 30mmHg
 - Irreversible nerve and muscle damage can occur after 4-6 hours
 - Pulselessness is an early sign
 - Severe pain on passive stretch is a positive sign of compartment syndrome
8. Which of the following is **not** a treatment for crush syndrome?
- Aggressive IV fluids aiming urine output 200 – 300 ml/h for an adult
 - IV bicarbonate aiming urine pH > 6
 - IV Mannitol 1g/kg aiming to generate urine output if anuric
 - Acetazolamide IV 500mg if metabolic alkalosis occurs
9. In an earthquake mass casualty with high crush injury rates
- A fasciotomy should only be done if patient is <12 hours after injury
 - Delayed fasciotomies should be done routinely as it has been shown to improve long term outcomes
 - If a limb is paralysed a fasciotomy should be done as compartment syndrome is likely to be occult
 - When performed in a sterile manner delayed fasciotomies have a low infection rate
10. Which is correct regarding chemical spills and the zones of isolation and scene control
- Hot zone: wash and decontamination
 - Cold zone: continue wearing full protective gear
 - Warm zone: Triage and initial resuscitation
 - Hot zone: Removal of victims from scene
11. Which antidote does **not** match its targeted drug
- Cyanide = hydroxocobalamin
 - Staphylococcal Enterotoxin B = broad spectrum antibiotics
 - Organophosphate = pralidoxime
 - Cyanide = sodium thiosulphate

12. Which of the following radiation exposure dose on average is correct
- Background radiation = 10 mSv per year
 - Chest xray = 0.1 mSv
 - CT head = 20 mSv
 - CT abdomen = 100 mSv
13. Regarding radiation syndrome which is **incorrect**
- Prodromal phase includes nausea, vomits, diarrhoea which begin within a few hours and resolve in 2 days
 - Latent phase lasts for 1-3 weeks
 - The rate of depletion of Lymphocytes is a poor indicator of severity of radiation injury
 - Reappearance of GI symptoms after a 1 week latent period indicates GI syndrome and is universally fatal
14. In the treatment of radiation exposure mass casualty
- Radiation contamination is never immediately life threatening so should not supersede lifesaving medical intervention
 - There is no need to identify the radioactive material in internally contaminated patients as treatment is supportive
 - Once a patient is in the latent phase no more treatment is required and they can be discharged
 - The danger period for pregnancy related radiation exposure is after 20 weeks gestation

Answers

- C (assign a dedicated media liaison)
- A (patient is dead or dying do not attempt to resuscitate in a disaster, radial pulse not present control bleeding)
- A (black: septic shock, burns >95% and cardiac or respiratory arrest, red: shock or hypoxia present or imminent but patient likely to survive, yellow: can wait 45-60 min after given appropriate care without immediate risk, green: injuries localized without immediate systemic implications and unlikely to deteriorate for several hours)
- D (Most had resolution of all symptoms after 1 year)
- A (abdo injuries indicate close proximity to blast, skull xrays can be a useful screening tool, CT are important but a scarce resource control by disaster commander is essential)
- D (Hypocalcaemia + hyperkalaemia, acidosis, myoglobin induced renal failure, myoglobin induces lipid per-oxidation and O₂ free radicals)
- C (normal compartment pressures <15 mmHg, pulselessness is a late sign)
- C (mannitol given only after urine output established, acetazolamide can enhance bicarb excretion in urine)

9. A (delayed fasciotomies are no longer routine and can have high infection bleeding rates and poorer long term outcome)
10. D (Hot Zone: full gear removal of victims, warm zone: full gear decontamination, cold zone: lower level of protective gear and triage and resus)
11. B (Staph enterotoxin B = supportive care it is a toxin not a bacteria)
12. B (background radiation 3 mSv per year, CXR 0.1 mSv, AXR 1 mSv, CT head 2 mSv, CT chest 8mSv, CT abdo 10 mSv, lethal dose LD50 4,500 mSv)
13. C (rate of decline of lymphocytes is a good measure of extent of radiation injury)
14. A (Different treatments are tailored for specific radioactive material in internally contaminated patients, long term treatment during bone marrow depression phase which is after latent phase is needed including prophylactic antis, 8 – 15 weeks gestation is highest risk period)