



Forensic Medicine Minor Exam

الامتحان كتابي يتكون من خمسة أسئلة وبخمس وثلاثين علامة (ملاحظة مهمة: تتكرر نفس الأسئلة كثيرا وعلى مدار الدفعات السابقة كلها)

List the medicolegal cases.

Living people cases:

- 1) Wound.
- 2) RTA.
- 3) Burns.
- 4) Poisoning.
- 5) Fights.
- 6) Falling down.
- 7) Child abuse.
- 8) Women abuse.
- 9) Sexual offence.
- 10) Family violence.
- 11) Illegal pregnancy.
- 12) Criminal abortion.
- 13) Impotence and sterility.
- 14) Identification.
- 15) Medical malpractice.
- 16) Age estimation.
- 17) إثبات أو نفي الجنون
- 18) اصابات الجنون
- 19) Drug abuse.

Dead people cases:

- 1) All cases of living people.
- 2) Asphyxia.
- 3) Sudden unexpected death.
- 4) Infanticide.
- 5) Electrocution.

Define antidote

Give the antidote for each of the followings:

- 1) **Oxalic acid:** IV Ca gluconate
- 2) **Heroin:** Naloxone
- 3) **Benzodiazepine:** Flumazenil
- 4) **Methanol:** Ethanol or Fomepizole
- 5) **Cyanide:** Hydroxocobalamin Note: Cyanide antidote kit includes amyl nitrate, Na nitrite, and Na thiosulfate.
- 6) **Carbamates:** Atropine, Pralidoxime
- 7) **Ethylene glycol:**
- 8) **Sarin:**
- 9) **Beta blockers:**
- 10) **Temzepam:**
- 11) **Sulfuric acid:**
- 12) **Anticholinergic:**
- 13) **paracetamol:**
- 14) **Iron:**

15) Diazepam

16) acetaminophen

**** All of them from the table**

Except sulfuric acid it is strong acid has no antidote but treated with demulcent

Define suspended animation.

Slowing of life processes by external means without termination.

Why it's important?

Because it's reversible by resuscitation.

Give examples of it.

- 1) Electrocutation.
- 2) Hypothermia.
- 3) Sun stroke.
- 4) Drowning.
- 5) Drug overdose (e.g. barbiturates).
- 6) Head injury.

What is the treatment of snake bite ?

- a) Pre-Hospital: ABC /Immobilize limb/ Cold compression
- b) In Hospital: Antihistamine. Hydrocortisone. Tetroxide. Venom (Anti-snake)

Mention:

A. Various form of violent asphyxia?

- a) Traumatic asphyxia
- b) Positional asphyxia
- c) Riot crush

B. Postmortem change in throttling ?

**** General:** a) Congestion of the face. b) Edema of the face. c) Cyanosis (blueness) of the skin of the face. d) Petechial hemorrhages in the skin of the face and the eyes.

**** Special features:** All are neck signs: a) Multiple contusions and fingernail abrasions. b) Contusions of the deep tissues of the neck.

C. Key point in hyoid bone ?

Inward fracture of the hyoid bone (it is the most common cause of hyoid bone fracture) and fracture of the thyroid cartilage.

Define antidotes and give one example on each ?

- 1) **Chemical substances that counteract the effects of poisons by:** Neutralizing them (e.g. antibody-antigen reactions, chelation , chemical binding) or antagonizing their physiologic effects (e.g. activation of opposing nervous system activity, Provision of competitive metabolic or receptor substrate.
- 2) **Mechanical/ physical:** Activated charcoal /Demulcents.
- 3) **Chemical antidotes:** Magnesium oxide.
- 4) **Universal antidotes:** Tannic acid.
- 5) **Physiological/ pharmacological:** Naloxone for opioids.
- 6) **Chelating agents:** BAL/EDTA

Define rigor mortis, When does it appear ? In which mechanism ?and how it can be useful to indicate timing of death ?

** Temperature-dependent, physicochemical change that occurs within muscle cells as a result of lack of oxygen causing the limbs of the corpse to become stiff and difficult to move or manipulate.

** Death cessation of respiration depletion of oxygen less ATP secondary anoxic process lactic acid cell cytoplasm becomes increasingly acidic with low ATP and high acidity, the actin and myosin fibers bind together and form a gel but Unlike normal muscle contractions, the body is unable to complete the cycle and release the coupling between the myosin and actin, creating a perpetual state of muscular contraction, until the breakdown of muscle tissue by digestive enzymes during decomposition.

** Rigor mortis disappears with decomposition.

** RM initiated when the ATP concentration falls to 85% of normal.

** It starts to develop about 2-3 hrs. After death.

** Rigor develops uniformly throughout the body but it is first detected in smaller muscle groups such as those around the eyes, mouth, jaw & fingers.

** Peaks in the next 6-12 hrs.

** It concludes around 36-48 hrs. After death.

** Affected by the season ,muscular activity and age of the dead person.

** It resolves in the same order in which it develops.... Then secondary flaccidity.

Discuss in details the classical features of asphyxia.

1-Cyanosis

Caused by an increase in the amount of reduced hemoglobin. It does not become observable until at least 5 g of reduced hemoglobin is present.

2-Congestion

Is the red appearance of the skin of the face and head.

It is due to the filling of the venous system when compression of the neck or some other obstruction prevents venous return to the heart.

3-Oedema

Is the swelling of the tissues due to transudation of fluid from the veins caused by the increased venous pressure as a result of obstruction of venous return to the heart

4-Patechiae

Are pinpoint hemorrhages produced by rupture of small venules.

** Rupture is caused by sudden over distention following abrupt increases in intravascular pressure

** These are most common in the visceral pleura and epicardium. also seen in the conjunctivae and sclera.

Mention the post mortem eye changes.

** Loss of corneal and light reflexes.

** Mid-dilated pupils. Irregular size and shape of the pupils (anisocoria).

** Eyelids usually closed incompletely... Tache Noire. Loss of intraocular tension. (normally its 14 mm hg becomes 0 mm hg after 2 hours of death).

** The retinal vessels show the break up or fragmentation of the columns of blood, which is called 'trucking' or 'shunting'

What are the long term effects of heroin?

** Powerful physical and psychological addiction.

** Skin infections, boils or abscesses, and bacterial infections.

** Blood-borne diseases such as HIV/AIDS, Hepatitis B, and Hepatitis C.

- ** Kidney disease and Liver disease. ☒Scarred or Collapsed veins.
- ** Arthritis and Rheumatologic complications.
- ** Severe Depression, can potentially lead to suicide.
- ** Overdose, unconsciousness, without immediate hospitalization can result in death

What is EDTA? Why do we use it?

- ** "Ethylene Diamine Tetra Acetic * A chelating agent effective in lead, mercury, copper, cobalt, cadmium, iron and nickel poisoning.
- ** Used as an antidote for heavy metals (Effective in lead, mercury, copper, cobalt, cadmium, iron and nickel poisoning)
- ** More effective in treating mercury and arsenic poisoning than BAL

List the injuries on the victim of child abuse(signs)

Physical abuse:

Skin injuries: • Bruises. • Burns. • Bites.

Skeletal injuries: • Fractures.

Head injuries: • Subarachnoid haemorrhage. • Subdural hematoma. • Epidural hematoma. • Cerebral haemorrhage. • Concussion. • Contusion.

Eye injuries: • Black eye. • Retinal haemorrhage or detachment. • Lens discoloration.

Oral injuries: • Bruised or cut lips. • Broken teeth.

Abdominal injuries: • Bruises. • Burns

Emotional:

- Eating disorders: obesity ,anorexia.
- Speech disorders.
- Developmental delays in the acquisition of speech or motor skills .
- Nervous disorders
- Habit disorders :biting ,rocking, head banging .
- Cruel behaviour :seeming to get pleasure from hurting children, adults or animals
- Age-inappropriate behaviour :bedwetting

Neglect:

- Recurrent infections and frequent admissions to hospital .
- Unexplained bruises and sever nappy (diaper) rash
- Short stature and microcephaly .
- Poor hygiene: dirty skin and clothes
- Learning difficulties
- Lack of self-esteem
- Poor skills
- Lack of social responsiveness
- Overactive and aggressive
- Self injurious behaviour

Define abrasions. What is its forensically use/importance of it?

Abrasions :

It is the most superficial type of wound, and affect only the epidermis.

Medicolegal importance :

- It indicates violence.
- Its shape gives an idea about the causative instrument.
- Its site in the body may give an idea about the type of the crime.

- The age of the abrasion gives an idea about the time of its infliction.
- An abrasion may rarely cause death when it is infected by tetanus .
- Abrasions differentiate cut wounds from laceration in the areas where the skin is stretched over bone (e.g. the skull).
- Abrasion differentiates hypostasis from bruises

List the mechanisms of CO poisoning.

Mechanism of action of CO:

Binds to haemoglobin ,myoglobin and cytochrome oxidase.

Binding to:

- Hemoglobin: produces carboxyhemoglobin that decreases the oxygen carrying capacity of the blood inhibiting the transport, delivery and utilization of the oxygen by the body.
- Myoglobin: Impair its ability to utilize oxygen, causing reduced cardiac output and hypotension.
- Cytochrome oxidase: interferes with aerobic metabolism and efficient ATP synthesis, cells will respond by switching to anaerobic metabolism causing anoxia, lactic acidosis and cell death

Mention the types of pesticides.

Organophosphates and carbamates

What's the treatment and preventive measures in treating such poisoning?

- Protect yourself.. remove patient from source.. decontaminate (wash with normal saline /tap water for at least 20-30 minutes, irrigate eye with normal saline /lactated ringer).. Atropine, pralidoxime, diazepam.
- Preventive measures :use gloves ,apron,wash thoroughly after use ,store away from children ,follow manufacture instructions(regarding dilution ,storage ..etc).

Mechanisms that causes death when killed from neck?

Dr answer after exam:

- 1-vagal inhibition
- 2-airway obstruction
- 3-cut of spinal
- 4-carotid artery block

Definition of defence wounds and characteristics, where they normally appear?

Definition of strangulation and hanging, types of strangulation, difference between strangulation and hanging.

Definition of stab wounds and the medico-legal importance

Definition of: somatic death, clinical death, cellular death, brain death.

Definition of somatic, clinical, brain, and cellular death and difference between them.

Definition of strangulation. Mention the 3 types of strangulation. Mention the differences between

Define chelating agents, examples, dosage and route of administration, duration and brief explanation of each one

Define the chemical weapons and what is the mechanism of action for chlorine

Definition of Smothering + postmortem changes in a dead body caused by smothering

Define death , enumerate the early postmortem changes with details

Definition of contusion and how do you use it in time of death

Define contusion and the importance of a bruise in determining the time

Define adipocere and its medico legal importance

Define defence wounds , its importance and medicolegal significance

Define apparent death and its significance and give 3 examples
Define sarin + its mechanism + and how to diagnose and treat
Poison definition and mode of action.

Difference between hypostasis and bruises
Differentiate between incised wound and stab wound?
Difference between homicidal and suicidal post mortem changes
Difference between vegetative state and brain stem death.
Differentiate between stab wound and incision wound.
Differentiate between complete and incomplete hanging
Compare between hypostasis marks and bruises.

What is a chemical weapon? Write about chlorine.
What are the medical uses of activated charcoal and explain its mechanism
What is heroin? How it's used? What are the late complications?
What are the indications and contraindications for gastric lavage
What is gastric lavage procedure, when we do it, what solution is used in it, why it's contradicted in corrosive acidity drugs, explain how we pump the stomach in gastric lavage procedure.
What are the changes in the chemoreceptor and baroreceptors in strangulation and suffocation?
What is Contact flattening + importance of hypostasis and its relation to with time and cause of death + signs of immediate death?
What are the signs, symptoms and treatment of acute organic phosphorus poisoning.
What do you do if someone poisoned from nerve agent chemical weapon?
What are the post mortem findings in traumatic asphyxia?
Write about throttling post-mortem changes, add a note on hyoid bone.
Write the difference between wet and dry drowning.
Write about sarin, mechanism of action, diagnosis and treatment.
Write about Dimercaprol (British anti-Lewisite).
Write the medico legal aspects of wounds and the role of physician in the medico legal aspect?
Mention the factor that affect the severity of bruises.
Mention examples of insecticides. What is the mechanism of action? How to deal with insecticides poisoning? How to prevent it?

Causes of death in cut throat injuries.
Complications of alcohol abuse.
Mechanism of action, diagnosis and treatment of organophosphate poisoning and antidote for all.
Importance and diagnosis of violent asphyxia.
Give an account about whole BOWEL IRRIGATION.
Diagnosis of organophosphorus poisoning?
Treatment of aspirin poisoning.
The doctor duty towards poisoned body (live-dead).
Post mortem changes + early or immediate signs + estimate the time of death
Discusses the post-mortem changes in muscles.
Pesticides poisoning signs and symptoms and mechanism of action
General treatment of poisoning, legal and medical duties for doctor
Types of "irritant" poison and mention examples for each type
Sarin mechanism of action, diagnosis and management?
Factors affecting severity of bruise

Classify mechanical injury + definition of contusion and how do we predict the time of it
 Types of drowning and post mortem changes of wet drowning
 First aid +hospital treatment of snake bite + types of irritant poisons + one example for each one
 Indication + contraindication of stomach lavage
 Give a detailed account on whole bowel irrigation
 Talk about BAL in details
 Medico legal importance of wounds and the role of physician in wound evaluation for medico legal purposes
 Complications of cocaine
 Chronic Complications of cocaine
 cocaine mechanism of action, clinical features and management

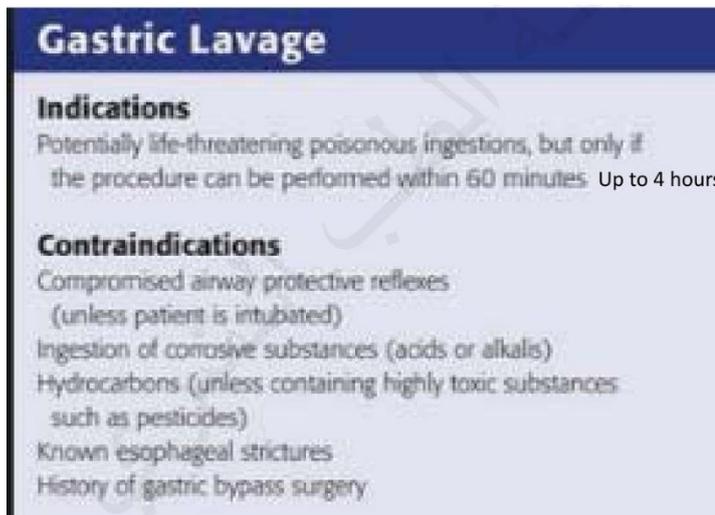
Differentiate between somatic & molecular death.

◦ Differentiation 8.1: Somatic death and molecular death			
S.No.	Feature	Somatic death ²	Molecular death ³
1.	Definition	Complete and irreversible cessation of function of brain and stoppage of the circulation and respiration	Death of individual tissues and cells
2.	Onset	Precedes molecular death	Succeeds somatic death (1-2 h after stoppage of vital functions)
3.	Response to external stimuli	Muscle responds thermal, electrical or chemical stimulus	Does not respond
4.	Confirmation	Flat ECG and EEG, and absent breath sounds	Rigor mortis, algor mortis, postmortem lividity, putrefaction
5.	Resemblance	Suspended animation, coma, hypothermia	Does not resemble any condition

Differentiate between rigor mortis and cadaveric spasm

	Rigor Mortis	Cadaveric Spasm
Onset	2-3 hours after death	At same time of death "instantaneous"
Duration	36-48 hours	Few hours, till rigor mortis starts
Intensity	Moderate	Very severe
Mechanism of action	Low ATP levels (<85% of normal)	Unknown; Predisposing factors: o Excitement o Fear o Fatigue o Exhaustion o Nervous tension
Muscles affected	All body muscles affected gradually	Selected muscles (which were in state of contraction) at time of death.

What are the indications and contraindications for gastric lavage?



Gastric Lavage

Indications
Potentially life-threatening poisonous ingestions, but only if the procedure can be performed within 60 minutes. Up to 4 hours

Contraindications
Compromised airway protective reflexes (unless patient is intubated)
Ingestion of corrosive substances (acids or alkalis)
Hydrocarbons (unless containing highly toxic substances such as pesticides)
Known esophageal strictures
History of gastric bypass surgery

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