GENESIS

(Post Graduation Medical Orientation Centre)

Foundation-1 Batch

Total Number- 60 | **Subject: Cell Injury & Adaptation** | **Time: 20 Min**

Pass Mark-42 | Question 16-30 is based on Single answers | **Date: 07/03/20**

1. Which are the consequence of ATP depletion
a) Influx of K^+
b) Decrease $[H^+]$ conc.
c) Increase Glycogen use.
d) Influx of H_2O
e) Increase ROS
F (Efflux) F(increase) T T F [ref. Robbin'S 9th p-45]

2. Cell membrane damage occurs due to
a) Progressive loss of membrane phospholipids
b) Cytoskeletal injury
c) Loss of intracellular calcium
d) Inactivation of intracellular proteases
e) Free radical induced injury
TTFFT Ref. Robbin's 9th p-49

3. Ultrastructural changes of reversible cell injury include
a) Loss of microvilli
b) Dilation of the ER
c) Nuclear alteration
d) Cytoplasmic change
e) Cell membrane alteration
T T T F(mitochondria)F (plasma membrane)(Robbin's p-41)

4. In necrosis
a) It is reversible change
b) Commonly occurs in dead tissue
c) The cells swells with loss of demarcation &contour
d) Caseous necrosis is found in TB
e) coagulative necrosis occurs in CNS
F (Irreversible) F(Living tissue) T T F(Liquifactive)

5. Synergistic spreading gangrene
a) Causative organism is clostridia
b) Abdominal wall infections are known as Maloney's gangrene
c) Scrotal infection known as Fournier's gangrene
d) Immunocompitent patient has equal chance to develop
e) Also called subdermal gangrene
TFTFF

6. Coagulative necrosis
a) Is a type of accidental cell death
b) Typically caused by ischemia or infarction
c) Architecture is preserved for at least a couple of days
d) Denatures structural proteins as well as lysosomal enzymes
e) Can also be induced by high local temperature
T T T T(thus blocking the proteolysis of the damaged cells) T

7. Morphological features of coagulative necrosis are
a) Presence of numerous Eosinophil
b) Recognizable tissue & cellular architecture
c) Absence of macrophages in early stage
d) Resulting in denaturation of proteins
e) Results from interruption of blood supply
TTFTT (Ref. Robbin's 9th p-43 + Khaleque p-5)

8. Features Caseation necrosis
a) Is a distinctive form of coagulation necrosis
b) Is encountered most often in tuberculosis
c) Appears cheesy white on naked eye
d) Implies preservation of basic outline of necrosed cells
e) Is characteristic of focal bacterial/fungal infection
TTTF (coagulative) **F** (Liquefactive)

9. Moist gangrene occurs in
a) Buerger's disease
b) Diabetic foot
c) Raynaud's disease
d) Strangulated bowel
e) Testicular torsion
FFFTT (Explanation:
Site: Intestine,Mouth ,Vulva, Scrotum,anterior abdominal wall and thigh.
More common in: Diabetic & PVD patients
Occurs in: Strangulated hernia, intussusception, volvulus, thrombosis of mesenteric in artery
[Ref: Khaleque pathology P-12]

10. Apoptotis occurs in
a) Viral infection
b) Bacterial infection
c) Fungal infection
d) Tumor suppression
e) Aging process
TFFTT

11. Autophagy
a) Act as a defense against cancers
b) Is an irreversible change
c) Degrades mycobacteria
d) Impaired formation causes Huntington disease
e) Increased formation causes Alzheimer disease
T F (Reversible) TTT Ref. Robbin's 9th p-61

12. Which are correct about intracellular accumulation
a) Fatty liver may lead to cirrhosis & hepatocellular carcinoma
b) Obesity, starvation can cause steatosis
c) Mild fatty change does not affect the gross appearance of liver
d) Niemann-pick disease types C is an example of intracellular protein
e) Anthracosis occurs due to intracellular accumulation of lipid
TTTF (Cholesterol) F(Exogenous pigments) (Ref. Robbin's 9th p-62-64)

13. Steatosis
a) Is caused by alcohol abuse only
b) May lead to cirrhosis
c) May lead to hepatocellular carcinoma
d) Is only seen in liver
e) May occur in heart
F (Other- Obesity, DM, Anorexia, Malnutrition) T T F (Also heart, kidney, muscle & other organ)T [Ref: Robbin's 9th P-62]

14. Endometrial hyperplasia associated with/ca?
a) Granulose cell tumor
b) Sertoli leydig cell tumor
c) DM
d) HTN
e) OCP containing only progesterone
T F F F F

15. Targets of ROS in case of cell injury
a) Phospholipid
b) Fatty acid
c) Nucleic acid
d) Enzyme
e) Ion channel
F T TT F

Each question below contains five suggested answers- choose the <u>one best</u> response to each question (16-30)

16. A tissue preparation is experimentally subjected to a hypoxic environment. The cells in this tissue begin to swell, and chromatin begins to clump in the nucleus. ATPases are activated, and ATP production decreases. Which of the following ions released from mitochondria leads to these findings and to eventual cell death?
a) Ca2+
b) Cl–
c) $HCO3^{2-}$
d) K+
e) Na+
A [Ref.Robbin's 9th P-47]

17. Which of following is feature of irreversible cell injury
a) Mitochondrial swelling
b) Profound disturbances in membrane function
c) Cellular swelling
d) Dilatation of ER
e) Formation of blebs
B

18. A woman with chronic atrial fibrillation suddenly developed an acute abdomen. On laparoscopy small bowel loops were dusky red in color & mesenteric vein were patent. What is the pathology
a) Coagulative necrosis
b) Dry gangrene
c) Wet gangrene
d) Gas gangrene
e) Liquefactive gangrene
C

19. Liquefaction associated with necrosis occurs after infarction
a) Heart
b) Kidney
c) Brain
d) Lungs
e) Spleen
C

20. Gangrene is necrosis together with
a) Desiccation
b) Coagulative necrosis
c) Involvement of limb
d) Infection of the tissue with Gram-positive organisms
e) Putrefaction
E [Ref: Smiddy]

21. Regarding apoptosis which is false
a) Apoptosis does not clicit an inflammatory reaction
b) Apoptoxis may progress to necrosis
c) Necrosis & apoptosis can not coexist
d) Apoptosis may be physiological & pathological both
e) Chromatin condensation is the most characteristic feature of apoptosis
C

22. A 71-year-old man diagnosed with pancreatic cancer is noted to have decreasing body mass index. His normal cells comprising skeletal muscle undergo atrophy by sequestering organelles and cytosol in a vacuole followed by fusion with a lysosome. Which of the following processes is most likely occurring in the normal cells but inhibited in the cancer cells of this man?
a) Aging
b) Apoptosis
c) Autophagy
d) Hyaline change
e) Karyorrhexis
C [Ref.robbin's 9th P-61]

23. Fatty change of the liver occurs is not related with
a) Starvation
b) Protein energy malnutrition (PEM)
c) Haemochromatosis
d) Normal pregnancy
e) Obesity
C

24. Which of the followings is not a common cause of metastatic calcification?
a) Priamry hyperparathyroidism
b) Secondary hyprparathyroidism
c) Tertiary hyperparathyroidism
d) Milk alkali syndrome
e) Hyperthyroidism
B

25. A 35-years-old man is a habitual smoker. If a biopsy is taken from the respiratory tract in this man, the epithelium of respiratory tract is most likely to show
a) Mucous hyperplasia
b) Smooth-muscles hyperplasia
c) Squamous cell anaplasia
d) Squamous cell hypertrophy
e) Statified squamous metaplasia
E

26. In an experiment, cells are subjected to radiant energy in the form of x-rays. This results in cell injury caused by hydrolysis of water. Which of the following cellular enzymes protects the cells from this type of injury?
a) Phospholipase
b) Glutathione peroxidase
c) Endonuclease
d) Lactate dehydrogenase
e) Protease
B [Ref.Robbin's 9th P-48]

27. What is the most probable underlying cause of her complaint from sunburn?
a) Antigen—antibody reaction
b) Damage to DNA
c) Free radical injury
d) Ischaemic injury
e) Vasoconstriction
C

28. False statements regarding necrosis and apoptosis
a) Cellular adaptation is preserver in apoptosis
b) Total cell content comes out following cel lysis
c) In atrophied tissue, apoptosis occurs.
d) Coagulative necrosis may occurs in ischemic brain disease
e) Gene activation is responsible in both.
E

29. Psammoma body is commonly seen in
a) Papillary carcinoma of thyroid
b) Follicular carcinoma of thyroid
c) Medullary carcinoma of thyroid
d) Adenocarcinoma
e) Glioma
A

30. Which of the following provides an example of concomitant hyperplasia and hypertrophy?
a) Breast enlargement at puberty
b) Cystic hyperplasia of the endometrium
c) Enlargement of skeletal muscle in athletes
d) Uterine growth during pregnancy
e) Left ventricular cardiac hypertrophy
D