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CLASS =sectionA

DSIP = MLT (2nd)

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PAPER = PATHOLOGY

ANSWERS

1) DEIFINE THE FOLLOWING TERM WITH EXAMPLE .

A) Atropy

Atropy is disease which occure in cell size or shrinkage in size of cell by the loss of substance is call atropy. E.g = physiologic.. snile stropy of uterud ,bone marrow atropy in old age, pathologic e,g

.Starvation atrphy, idiopathic atrophy, ischaemic etc

B) Hypertropy¹

The growing up of organ or tissue due to increase in size of cell is call hypertrophy.

e.g1pathologic1....hypertension or aortic valve disease

e.g1physiology1..Growth of uterus during pregnancy

C)HYPERPLASIA

In Hyperplasia the number of cell increase which

Cause the organ enlargement as a result cell mitosis Or division increase e,g

pathological...endometrial and benign prostatic hyperplasia ,

E,g

C) METAPLASIA1

Metaplasia is a reversible change in which one adult cell type is replaced by another cell type is called metaplasia.

4) Write down some difference between apoptosis and necrosis

Apoptosis

- *Cell shrinkage and fragmentation
- *nuclear condensation
- *no inflammatory response
- *pathologic
- *cell membrane absent
- *cell death programmed
- *cell death final event

necrosis

- *cell swelling and lysis
- *karyolysis
- *significant inflammatory response
- *pathologic and physiologic
- *cell membrane lack
- *cell death unregulated
- *cell death initial event

5) Write a note on Air Embolism¹

Air Embolism

Air embolism occurs when air is introduced into venous or arterial circulation resulting in obstruction of blood flow.

Risk factors

*Any surgical procedures that can lead to infusion of air.

*creation of a pressure gradient of air entry
peripheral ivs, central venous catheter,etc

. *Positive pressure ventilation. * Blunt and penetrating trauma to the chest abdomen, neck, or face can lead to entry of air .

Symptoms

.Breathing problem, joint,chest pain, stroke

2) What is free radical? What is the effect of Reactive Oxygen Species (ROS) on the cell

Free radical

*Radicals are atoms, molecules or ions with unpaired electrons in outer shell configuration.

*Free radicals may have positive, negative or zero charge

*Unpaired electrons cause radicals to be highly reactive.

Reactive oxygen species¹

ROS is used in a broad sense to collectively refer to free

EFFECT ON CELL

Radicals (H_2O_2 , $1O_2$ which are extremely reactive) of the biological system.

- In BIOLOGICALY ROS are formed as a

Byproduct of the normal metabolism of Oxygen and have important role in cell signaling and homeostasis.

However during time of environmental stress (e.g., UV or heat) result in significant damage to cell structures. accumulative this is called as oxidative stress. The production of ROS is strongly controlled by stress factor responses in plants, these factors that increase ROS production include drought, salinity, nutrient deficiency, metal toxicity and UVB radiation. ROS are also produced by exogenous sources such as ionizing radiation

Damaging effect

- Harmful effect of ROS on cell
- damage of DNA or RNA
- oxidations of polyunsaturated fatty acid in lipids.
- oxidation of amino acids in proteins

.oxidative deactivation of specific enzymes by oxidation.

3) How does the calcium ion influx affects the Cell

- Influx of calcium to cell then to cytosol comes from the extracellular fluid of the body and stores in mitochondria and endoplasmic reticulum in the cell
- Ca^{2+} activate the phospholipases (which damage the membrane), proteases (which damages cell membrane and cytoskeleton) and endonucleases (its damages DNA).
- This is one of the main mechanism of cell death, after the these severe damage to membranes of lysosomes then occure leakage of lysosomal enzymes or apoptosis. Then its

Occurs particularly in hypoxia and ischaemia and with certain toxins. Preventing the rise in Ca^{++} or restoring to normal levels and prevents cell death.

END