THE CELL INJURY

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The second year-pharmD
THE CELL INJURY

if the cells fail to adapt under stress, they undergo certain changes called cell injury
THE CAUSES OF THE CELL INJURY

INFECTION
- Viruses
- Bacteria
- Fungi

IMMUNOLOGIC REACTIONS
- Hypersensitivity

HYPOXIA
- Ischemia: as in arterial thrombosis
  - Inadequate oxygenation e.g. cardio-respiratory failure
  - Loss of oxygen carrying capacity of blood as in anemia

PHYSICAL AGENTS
- Trauma
- Heat, cold
- Radiation
- Electric shock

CHEMICAL AGENTS
- Acids, alkalies
- Alcohol
- Pigments
- Some metals

GENETIC DERANGEMENTS

NUTRITIONAL IMBALANCES
cell injury

Types of cell injury

Cellular Swelling
Fatty Changes

Necrosis
Apoptosis

REVERSIBLE CELL INJURY

IRREVERSIBLE CELL INJURY
EXAMPLES OF THE REVERSIBLE INJURY (CELLULAR SWELLING):

1. Ballooning of liver cells in viral hepatitis
2. Ballooning of B cells of islets of Langerhans in cases of type 1 diabetes mellitus

(FATTY CHANGES)

Healthy liver  Fatty liver
EXAMPLES OF THE IRREVERSIBLE CELL INJURY

(NECROSIS):
1. Liquefactive necrosis

(APOTOPSIS)
1. In physiological (normal) state such as:
   Cells after achieving their purport.
2. In pathological states such as:
   - Apoptosis of malignant tumor cells
   - In some cases of atrophy
THANK YOU

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