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Q1.What are the circulating cells in acute inflammation?Also write the characteristics of Acute inflammation.

Acute inflammation:

Acute inflammation is a short-term process occurring in response to tissue injury, usually appearing within minutes or hours. It is characterized by five cardinal signs: pain, redness, immobility (loss of function), swelling and heat.

Circulating cells in acute inflammation:

Neutrophils.

Monocytes.

Eosinophils.

Lymphocytes.

Basophils.

Platelets

Characteristic of acute inflammation:

1. :Short duration  
:Lasting from a few minutes upto a few days.  
:Formation of inflammatory exudate.  
:Predominantly neutrophil leukocyte accumulation.  
:Rubor (redness)
2. :Tumor (swelling)
3. :Calor (heat)
4. :Dolor (pain)

## Q2. Write a note on infarction and its types and write a note on Mast cells.

### Infarction:

Obstruction of blood supply to an organ or region of tissue, typically by a thrombus or embolus, causing local death of the tissue is known as infarction

The formation of a localized area of ischemic necrosis within a tissue or organ due to impaired arterial supply or the venous drainage

The necrosis area is called "infarct". An extremely important cause of clinical illness:...myocardial infarction...cerebral infarction. Infarction is tissue death (necrosis) due to inadequate blood supply to the affected area. It may be caused by artery blockages, rupture, mechanical compression, or vasoconstriction. The resulting lesion is referred to as an infarct (from the Latin *infarctus*, "stuffed into")

### Types:

- :White infarcts (anemic infarcts)
- :Red infarcts (hemorrhagic infarcts)
- :Septic infarcts

### Mast cell:

**Mast cell, tissue cell of the immune system of vertebrate animals. Mast cells mediate inflammatory responses such as hypersensitivity and allergic reactions. ... Upon stimulation by an allergen, the mast cells release the contents of their granules (a process called degranulation) into the surrounding tissues type of white blood cell that is found in connective tissues all through the body, especially under the skin, near blood vessels and lymph vessels, in nerves, and in the lungs and intestines.**

**Mast cells serve the same general functions in the body and central nervous system, such as effecting or regulating allergic responses, innate and adaptive immunity, autoimmunity, and inflammation. Across systems, mast cells serve as the main effector cell through which pathogens can affect the gut–brain axis.**

### Q3. Which are the cells having proliferative capacity? Explain them, also write about the characteristics of Benign tumor?

#### Answer.

**A several cell type proliferate during tissue repair. Remnants of the injured tissue which attempt to restore normal structure.**

**Vascular endothelial cell to create new vessel that provides nutrients needed for the repair process.**

**Fibroblasts ( The source of the fibrous that form to the scar to defect that can not be corrected by regeneration) .**

**The ability of tissue to repair themselves is determined in part by their intrinsic proliferative capacity.**

**Tissue of the body are divide onto three groups.**

- **Label. ( Contemptuously dividing tissue)**
- **Stable tissue.**

- **Permanent tissue.**

### **Characteristics of benign tumor.**

**Benign tumor are generally slow growing and depending upon location remain asymptomatic or may cause serious symptoms.**

**Benign tumor are generally avoid are spherical shape.**

**Benign tumor expand and push aside with out invading infiltrating or metastasised.**

### **Q4. What is hypovolumic shock? Explain along with its conditions.**

#### **Hypovolemic shock**

**Hypovolemic shock is an emergency condition in which severe blood or other fluid loss makes the heart unable to pump enough blood to the body. This type of shock can cause many organs to stop working.**

#### **Causes**

**:Losing about one fifth or more of the normal amount of blood in your body causes hypovolemic shock.**

**:Blood loss can be due to:**

**:Bleeding from cuts**

**:Bleeding from other injuries**

**:Internal bleeding, such as in the gastrointestinal tract**

**The first factor to be considered is whether the hypovolemic shock has resulted from hemorrhage or fluid losses, as this will dictate treatment. When etiology of**

hypovolemic shock has been determined, replacement of blood or fluid loss should be carried out as soon as possible to minimize tissue ischemia. Factors to consider when replacing fluid loss include the rate of fluid replacement and type of fluid to be used.

Trauma is the most common cause of hemorrhagic shock, but causes can span multiple systems. Tachycardia is typically the first abnormal vital sign of hemorrhagic shock. As the body attempts to preserve oxygen delivery to the brain and heart, blood is shunted away from extremities and nonvital organs. This causes cold and mottled extremities with delayed capillary refill. This shunting ultimately leads to worsening acidosis. The "lethal triad" of trauma is acidosis, hypothermia, and coagulopathy. Trauma-induced coagulopathy can occur in the absence of the hemodilution of resuscitation. Damage control resuscitation is based on three principles permissive hypotension, hemostatic resuscitation, and damage control surgery. Permissive hypotension targets a systolic blood pressure of 90 mmHg accepting suboptimal perfusion to end organs for a limited time to achieve hemostasis.

## Q5. What is Edema? Explain its types also write about the classification of Thrombosis.

### Edema

"is the medical term for swelling. Body parts swell from injury or inflammation. It can affect a small area or the entire body. Medications, pregnancy, infections, and many other medical problems can cause edema. Edema happens when your small blood vessels leak fluid into nearby tissues. That extra fluid builds up, which makes the tissue swell. It can happen almost anywhere in the body.

### Types

There are many types of edema. Each one can indicate a range of further health conditions. Here are some types.

### Peripheral edema:

This affects the feet ankles, legs, hands, and arms. Signs include swelling, puffiness, and difficulty moving a part of the body.

### Pulmonary edema:

Excess fluid collects in the lungs, making breathing difficult. This can result from either congestive heart failure or acute lung injury. It is a serious condition, it can be a medical emergency, and it can lead to respiratory failure and death.

### Cerebral edema:

This occurs in the brain. It can happen for a range of reasons, many of which are potentially life-threatening. Symptoms include headache, neck pain or stiffness, whole or partial vision loss, change in consciousness or mental state, nausea, vomiting, and dizziness.

### Macular edema:

This is a serious complication of diabetic retinopathy. Swelling occurs in the macula, the part of the eye that enables detailed, central vision. The person may notice changes to their central vision and how they see colors.

Edema can occur in other locations as well, but those mentioned above are the most common. It can indicate one of many serious health conditions. It is important to check with a doctor if you are concerned about any kind of swelling.

## Thrombosis

Thrombosis is a process involving the formation of a clot in the bloodstream and is classified into several different types, according to the location of the thrombus. The two broad classifications are venous thrombosis and arterial thrombosis, depending on whether the clot was developed in an artery or a vein.

### Deep Vein Thrombosis

**Deep vein thrombosis (DVT) commonly involves the formation of a blood clot in the femoral vein of the leg and is the most common type of thrombosis to cause serious complications. If the thrombus breaks off to form an embolism it moves with the blood towards the lungs and commonly causes pulmonary embolism**

**Typical signs of deep vein thrombosis are pain, swelling and redness in the legs. If these are noted and DVT is suspected, assessment and management should be conducted as soon as possible to reduce the possibility of pulmonary embolism.**

### **Portal vein thrombosis**

**This type of thrombosis occurs in the hepatic portal vein and can cause portal hypertension and affect the blood supply to the liver. In most cases, it results from other abnormalities in the body, such as pancreatitis, cirrhosis, diverticulitis or cholangiocarcinoma.**

### **Renal vein thrombosis**

**The renal vein can also be obstructed by a thrombus, which can result in reduced kidney drainage. This type is known as renal vein thrombosis and is common in patients with nephrotic syndrome.**