



# Immunology

Lecture (6)

Part 2

النادي الطبي

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## Lecture 6 Part 2

There is a relationship between inflammation and innate immunity.

\*\* ما رح يكون ف معلومات جديدة بس بدنا نعمل مراجعة لل inflammation

\*\* **inflare** —> to set a fire.

**Inflammation** —> a dynamic response of vascularized tissue to injury.  
(to injury not an infection).

في فرق بين infection و injury :

مثلا في حالة ال burn (ما في infection بس في inflammation)

\*\* **dynamic** —> يعني متغيرة يعني اشي بزيد و اشي بينقص

\*\* **local, protective, and may be cellular or acellular** (cell may be involved in inflammation, also proteins may be involved in inflammation).

\*\*Ex: hepatitis, meningitis, gastroenteritis (add itis to the end of the organ name), but there is an exception (pneumonia which is the infection of lung)

\*\* cholecystitis —> inflammation of the gall bladder.

### **Etiology** (الأسباب)

الدكتور قرأ كل الأسباب

1. Burn

2. Cut

(حتى لو الشخص جرح حاله بسكين معقم رح يصير عنده احمرار و التهاب)

3. Caustic substances like battery acids

(كلنا بنعرف انو الأحماض و القلويات بيعملوا احمرار و التهاب للجلد)

## The inflammation symptoms:

Red, swollen, tender, pain.

**\*\* immunologic reaction** → antibody mediated inflammation and there is no infection.

**\*\* يعني وجود inflammation لا يدل على وجود infection ، مش شرط .**

## Time course:

**\*\* Acute ( short ) , chronic ( Long ) ( both acute and chronic are bad but acute is better than chronic cause it stays for a short time and then it disappears ) .**

**\*\* Acute ( short ) ( less than 48 hours → this is only a general rule because acute hepatitis for example stays for 4 weeks but we consider it acute not chronic although it stays more than 48 hours ) .**

## Cell type:

1. in acute (neutrophils: we all should know that neutrophils is the first cell to reach the area of injury)

2. Chronic → 1) macrophage 2) lymphocyte

### Note:

We all should know the cells in this sequence:

1) neutrophils / 2) macrophage / 3) lymphocyte.

## Clinical signs of inflammation:

A) swelling ( edema )

B) loss of function ( due to pain the organ will have a mutation and won't be able to function in a good way )

C) redness and warm ( due to vasodilation )

يعني الدم اللي بيروح على هاد العضو عم يزيد طيب ليه ؟

1. to deliver the cytokines and mediations needed at the site of injury
2. To deliver the inflammatory cells ( like antibodies and the leukocytes which are found in blood )

بنشخص ال warm بظهر اليد مو بباطن اليد ( و الدكتور طلب نقراً عن الموضوع )

### **Pathogenesis:**

Increased blood flow explains redness and warmth ( the doctor read the slide )

\*\* Fluids will go out from the vessel, so RBC will increase inside vessel and blood viscosity will increase so blood circulation will slow down so we will have stasis

Stasis = بطئ في حركة الدم

\*\* **Pavementation** : the mechanism by which neutrophils reach the periphery of the vessel so it can go out to the site of inflammation (normally the neutrophils can't go outside the vessel so we have migration or pavementation by which the neutrophils will attach the vessels when its attracted by some substance we will talk about later such as chemokines) .

### **\*\* Leukocyte Exudation:**

We mentioned that the first cell that reaches the site of injury is neutrophils and the last cell is lymphocyte

T & B lymphocyte don't like to reach the tissue especially the T lymphocyte but in some cases it reaches the tissue .

The cells will try to reach the tissue or at least the nearest lymph o de by a process called ( leukocyte extravasation )

\*\* **migration , exudation , extravasation** : all of these words have the same meaning which is ( WBC leaving the circulation and reaches the tissue ) .