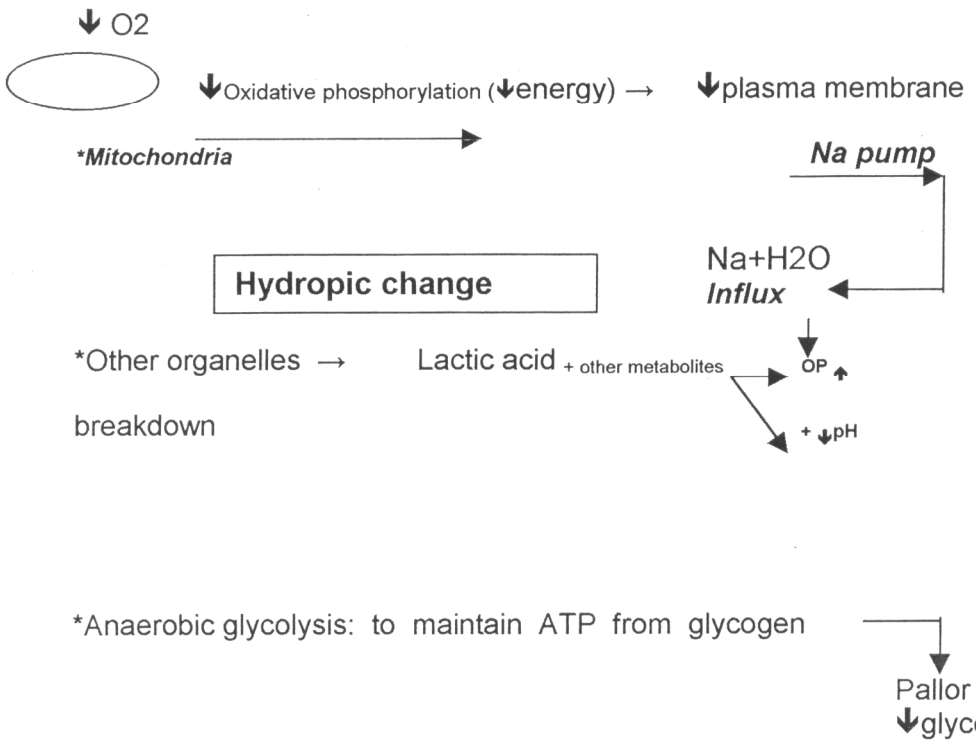
Diagram of SUBCELLULAR CHANGES in cell Injury



REVERSIBLE

IRREVERSIBLE

FIBRINOID NECROSIS: is a type of necrosis of connective tissue especially muscle fibers e.g. in immunological disorders arteritis & rheumatic fever (Aschoff nodule see later in systemic). The affected wall of the blood vessels becomes a swollen dark pink homogeneous mass with narrowing of the lumen. In Toxemia, the anterior abdominal wall muscle becomes a homogeneous pink mass with swelling of the muscle fibers

AMYLOID (glycoprotein)

DEFINITION: Waxy **extracellular** deposit of abnormal protein (*B pleated fibrils*) + non-fibrillary glycoproteins (normal serum amyloid protein P[1] (SAP) +carbohydrate heparan SO_4 (*glycosaminoglycans GAG*)), on basement membranes of blood vessels & epithelial acini, as well as on connective tissue reticular fibers.

AETIOLOGY & PATHOGENESIS

Old terminology: Primary amyloidosis: unknown cause
Secondary amyloidosis: 2ry to chronic disease

New terminology:
A) Systemic Amylodosis

Systemic amyloidosis has been classified into three major types that are very different from each other. These are distinguished by a two-letter code that begins with an A (for amyloid). The second letter of the code stands for the protein that accumulates in the tissues in that particular type of amyloidosis. The types of systemic amyloidosis are currently categorized as primary (AL), secondary (AA), and hereditary (ATTR).

1- Primary amyloidosis: Primary amyloidosis, or AL, occurs when a specialized cell in the bone marrow (plasma cell) spontaneously overproduces a particular protein portion of an antibody called the light chain. (This is why it is coded as AL.) The deposits in the tissues of people with primary amyloidosis are AL proteins. Primary amyloidosis can occur with a bone marrow cancer of plasma cells called multiple myeloma.

2-Secondary amyloidosis: When amyloidosis occurs "secondarily" as a result of another illness, such as some tumours, chronic infections (example, tuberculosis or osteomyelitis), or chronic inflammatory diseases (example, rheumatoid arthritis and ankylosing spondylitis), the condition is referred to as secondary amyloidosis or AA. The amyloid tissue deposits in secondary amyloidosis are AA proteins.

3- Heriditary or Familial amyloidosis : Familial amyloidosis, or ATTR, is a rare form of inherited amyloidosis. The amyloid deposits in familial amyloidosis are composed of the protein transthyretin, or TTR, which is made in the liver. Familial amyloidosis is an inherited autosomal dominant in genetics terminology.

B) Hemodialysis associated Amyloidosis: Beta-2 microglobulin amyloidosis occurs when amyloid deposits develop in patients with

[1] Amyloid P= an amyloid precursor protein & a common precursor to all forms of amyloid