

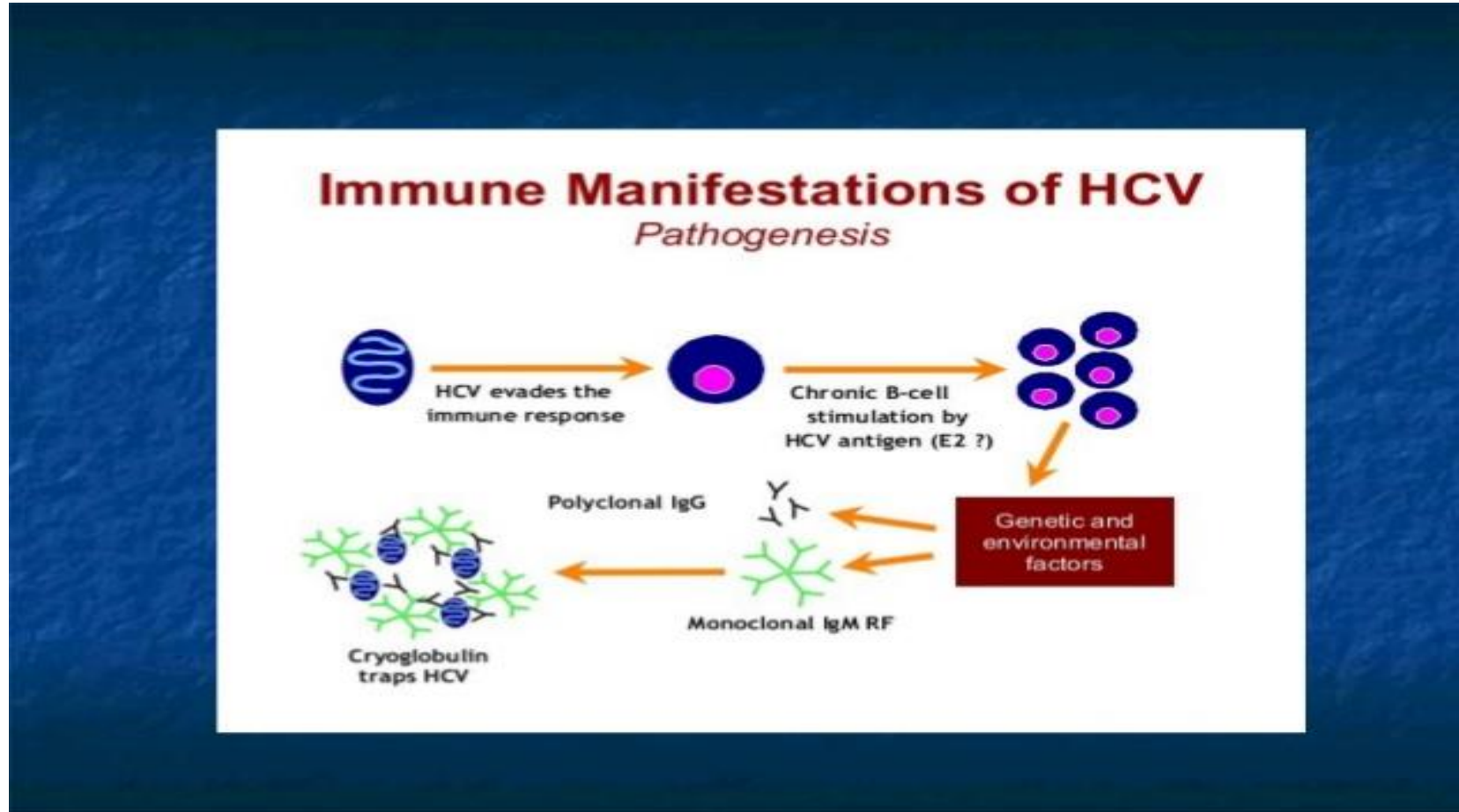
Extrahepatic manifestations of hepatitis C

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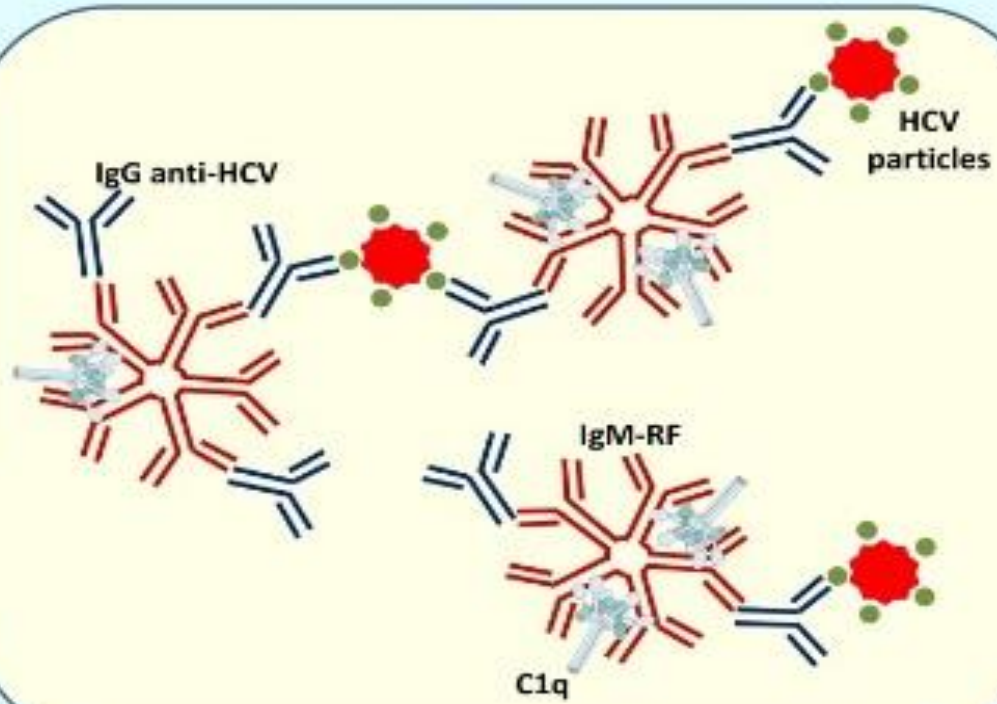
Hepatitis C virus is primarily **hepatotropic**, but it has also been shown to be **lymphotropic** (**B-cell lymphocyte**).

chronic HCV infection invade **B-cell : non-Hodgkin lymphoma**.

chronic B lymphocyte stimulation by the HCV antigen leads to monoclonal B-cell expansion present in **mixed cryoglobulinemia**



Cryoglobulins



Cryoglobulinemia

- ▶ A lymphoproliferative disorders in which clonal B lymphocyte expansion leads to immunoglobulin production—polyclonal immunoglobulin IgG class and monoclonal IgM as rheumatoid factor (RF)—leading to development of immune complexes that precipitate in the cold at temperatures below (37 C).
- ▶ **Type I:**10% Monoclonal IgG or IgM:
usually found in hematologic disorders:
multiple myeloma, Waldenstroms, MGUS
- ▶ **Type II:**60% Polyclonal IgG with monoclonal RF activity(IgM)
usually found in infections(HCV)and autoimmune d.
- ▶ **Type III:**30% Polyclonal IgG and polyclonal RF(IgM) •
usually found in infections(HCV)and autoimmune d.

Essential mixed cryoglobulinemia :

HCV primarily associated with Type II
and to a lesser extent, Type III

Essential mixed cryoglobulinemia

- ▶ **90%** of patients with essential mixed cryoglobulinemia are infected with HCV, **50%** of patients with HCV have cryoglobulins
- ▶ **clinical manifestations:**
- ▶ Vasculitis 7% (purpura and petechiae), ischemic necrosis and skin ulceration .
- ▶ Arthralgias 20% ,myalgia 10%.
- ▶ Membranoproliferative glomerulonephritis,
- ▶ Neuropathy sensory 9%, motor 5% .
- ▶ **Treatment of HCV** can result in decreased cryoglobulin levels and improvements in skin lesions, renal function parameters, and other symptoms.
- ▶ Cryoglobulinemia is commonly treated with **corticosteroids such as prednisone**, and medications that suppress the immune system. **Antiviral drugs** are prescribed when HCV is present

The most common extrahepatic manifestations of HCV

- ▶ **Essential mixed cryoglobulinemia: 50%**
vasculitis 7% (purpura and petechiae), arthralgias 20%, myalgia 10%, glomerulonephritis.
- ▶ **B-cell non-Hodgkin and primary hepatic lymphomas**
- ▶ **Monoclonal gammopathies. MGUS**
- ▶ **Autoimmune disorders: Subclinical autoantibody formation: RF 70%, ANA 40%, Antithyroid 40%.**
Sjögren syndrome, thyroid disease, RA, and autoimmune thrombocytopenic purpura.
Porphyria cutanea tarda (PCT).
- ▶ **Lichen planus and necrolytic acral erythema •**

both **acute and chronic** hepatitis c can lead to extrahepatic manifestations.

Testing for HCV infection in all these diseases.

Treatment of HCV infection result in improvement of all these diseases.

the severity of these disorders does not correlate with the severity of hepatic disease

European guidelines: patients with extrahepatic manifestations should be prioritized for treatment, regardless of the activity/severity of their liver disease alone.

AUTOIMMUNE DISORDERS

- ▶ **Asymptomatic autoantibodies:** RF 70% , ANA 40%, antithyroid antibodies 40% anticardiolipin antibodies 15%, ASMA 7%, of patients (diagnostic difficulties)
- ▶ **Sjögren syndrome/sicca symptoms(mouth and eye): 20-30%**
- ▶ **Autoimmune hepatitis:** anti-LKM-1 Ab. types 1 and 2 autoimmune hepatitis, treatment with prednisone and azathioprine +Antiviral therapy,
- ▶ **Thyroid disease** antithyroid antibodies 5 to 17%.
- ▶ **Immune thrombocytopenia (ITP) and autoimmune hemolytic anemia.**
- ▶ **rheumatoid arthritis (15%),**
- ▶ **systemic lupus erythematosus (13 %).**
- ▶ **polyarteritis nodosa (8 %),**
- ▶ **hypocomplementemia (52 %).**

DERMATOLOGIC DISEASE

Vasculitis:

is associated with essential mixed **cryoglobulinemia**. characterized by **palpable purpura, petechiae and pruritus**, which usually affect lowe rextremities. **Raynaud phenomenon**

Porphyria cutanea tarda:

(PCT) is a disease caused by the reduced activity of the hepatic uroporphyrinogen decarboxylase (UROD) which leads to accumulation of uroporphyrinogen in the blood and urine and is the most common porphyria

Lichen planus:

a chronic inflammatory disease of the skin and mucosa which can affect hair and nails and is characterized by pruritic papulae. These most often appear on the skin of extremities, face, scalp, nails, and mucosa of the gastrointestinal and genitourinary tract. Lichen planus occurs in various chronic liver diseases, and **anti-HCV antibodies can be found in 10-40% of patients with lichen planus**

Necrolytic acral erythema:

a condition characterized by painful, pruritic, and erythematous skin lesions of extremities.

Porphyria cut. tarda





Lichen Plannus

A



B



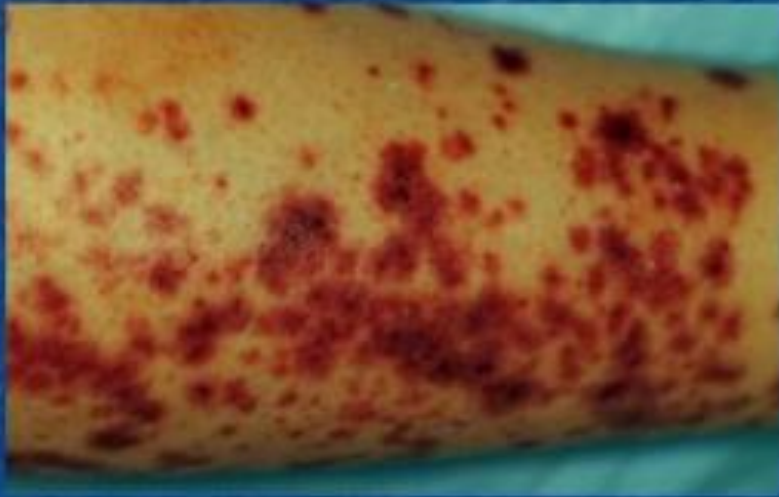
Lichen planus



Necrolytic acral erythema



Palpable Purpura



OTHER EXTRAHEPATIC MANIFESTATIONS

- ▶ **DIABETES MELLITUS AND INSULIN RESISTANCE:**

Successful HCV treatment may decrease the risk of diabetes mellitus.

- ▶ **Ocular disease:**

dry eyes, corneal ulcers (Mooren's ulcer), **uveitis**, scleritis.

- ▶ **decreased bone mineral density** and fractures (hepatic osteodystrophy), the risk of hip fracture. Arthralgia . Myalgia.

- ▶ **Cardiac and cardiovascular disease:**

higher rates of cardiovascular death . cerebro- and cardiovascular events.

- ▶ **Neurologic and neuropsychiatric disease:**

Depression . peripheral neuropathy.

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Porphyria cutanea tarda (PCT).
- ▶ **CHRONIC HEPATITIS C IS A SYSTEMIC DISEASE**

شكراً لأصغائكم

