Autoimmune Hepatitis

Definition:

- Autoimmune hepatitis is a chronic and progressive liver disease characterized by the presence of serum antibodies and peripheral blood T lymphocyte reactive with self proteins related to the liver leading to inflammation and damage of the liver .

•The exact cause of autoimmune hepatitis is unclear, but genetic and environmental factors appear to interact over time in triggering the disease .

Epidemiology

- May occur at any age and affects women more than men
- AIH Type 1(Adult onset),this type has bimodal presentation:10-25 years and 45-70 years with female to male ratio 4:1
- AIH type2(children onset),this type often presents less than 15 years old with female to male ratio 10:1

Pathogenesis

-Exact pathogenesis is unknown

-Genetically predisposed individuals with exposure to an environmental agent such as(smoking,infections,hormonal changes) triggers the autoimmune pathogenic process

-Genetic predisposing factors:

HLA-DR3:early onset , severe form

HLA-DR4 : late onset , better response to steroids

-Cell mediated immune attack is directed against the liver cells

-CD4 T lymphocytes are capable of becoming sensitized to hepatocyte membrane protein and destroying liver cell

-Humoral immunity plays a role in extra hepatic manifestations of arthritis , vasculitis , and glomerulonephritis by immune complex deposition and complement activation

Classification

*Several subtypes of this disorder have been proposed that have differing immunological markers. Although the different patterns can be associated with variation in disease aspects, such as response to immunosuppressive therapy, histological patterns are similar in the different settings and the basic approach to treatment (complete control of liver injury using immunosuppressive drugs and maintained with appropriate therapy) is the same

*the disease was classified into:

- Type 1
- Type 2
- Type 3

AIH type 1

- Most common type worldwide (80% of cases)
- Frequently seen in young adult females
- HLA DR3 or DR4 association
- **type 1 is distinguished by the presence of anti-smooth muscle antibodies (ASMA) with or without anti-nuclear antibodies (ANA).**
- **Typically associated** with IGG hyperglobulinaemia
- Failure of treatment is rare but relapse may occur with treatment withdrawal and may need long term maintenance therapy

Type 2 AIH

-Seen in children (2-14 years)

- DLA DRB association
- Type 2 autoimmune hepatitis presents with positive anti-liver/anti-kidney microsome (anti-LMK) type 1 antibodies or anti-liver cytosol (anti-LC) type 1 antibodies.
- Failure of treatment and relapse is more common than type 1

-note:adult onset of anti-LKM can be seen in chronic HCV infection

Type 3 AIH

- Least common form but the most severe
- Associated with ANTI-SLA/LP

Risk Factors:

Factors that may increase your risk of autoimmune hepatitis include:

- **Being female.** Although both males and females can develop autoimmune hepatitis, the disease is more common in females.
- **A history of certain infections.** Autoimmune hepatitis may develop after you're infected with the measles, herpes simplex or Epstein-Barr virus. The disease is also linked to hepatitis A, B or C infection.
- **Heredity.**
- **Having an autoimmune disease.** People who already have an autoimmune disease, such as , Type 1 DM , celiac disease, rheumatoid arthritis or hyperthyroidism (Graves' disease or Hashimoto's thyroiditis), may be more likely to develop autoimmune hepatitis.

Clinical Presentation

- Autoimmune hepatitis may present completely asymptomatic (12–35% of the cases), or acute or with signs of chronic liver disease
- The acute form is often indistinguishable from viral hepatitis
- Onset is frequently insidious with non specific symptoms

Asymptomatic patients may discover the disease during routine lab tests

- **Signs and symptoms may include:**

-Fatigue
-Abdominal
-discomfort Jaundice
-Hepatosplenomegaly
-Spider angiomas
-Skin rashes
- Joint pain
-Loss of menstrual
-periods Nausea
-Palmar erythema
-Portal hypertension

Diagnosis

- **AIH is a disease of exclusion**
- This approach includes determining symptoms, laboratory tests, and biopsies, as no single diagnostic test is pathognomonic for autoimmune hepatitis .

- Blood tests include tests that check levels of the liver enzymes alanine transaminase (ALT) and aspartate transaminase (AST) and check for autoantibodies such as antinuclear antibody (ANA) and anti-smooth muscle antibody (ASMA) . ALT and AST are particularly important because these liver enzymes are highly elevated in people with autoimmune hepatitis .
-Another findings include : elevates PT /Hypoalbuminemia/ positive ANA , ASMA or anti- LKM1

The serum levels of AST, ALT, and gamma globulin reflect disease severity and immediate prognosis at presentation.

Liver biopsy. clinicians perform a liver biopsy to confirm the diagnosis and to determine the degree and type of liver damage.

The histological hall mark finding is lymphoplasmacytic interface hepatitis (inflammation of hepatocytes at the junction of the portal tract and hepatic parenchyma)

Treatment

If left untreated , often leads to cirrhosis or liver failure

The treatment for autoimmune hepatitis is usually:

-induction therapy : prednisone with or without azathioprine , if these drugs are contraindicated for any reason we use mycophenolate ,cyclosporine , tacrolimus

-maintenance therapy :low doses of azathioprine or prednisone.

Patients should get immunized against hepatitis A and B

✓ A liver transplant may be an option when autoimmune hepatitis doesn't respond to drug treatments or in cases of advanced liver disease

***When giving azathioprine , CBC and liver enzymes tests should be frequently done before and during this medication as it can affect the kidney , liver , and can cause bone marrow depression**

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THANK YOU