

## Overview of Pathophysiology Involved in Autoimmune Disease

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### DESCRIPTION

Autoimmune disorders occur when the immune system erroneously targets the body. These are the common autoimmune disorders include celiac disease, type 1 diabetes, grave's disease, inflammatory bowel disease, multiple sclerosis, alopecia areata, addison's disease, pernicious anemia, psoriasis, rheumatoid arthritis, and systemic lupus erythematosus. Women's are more affected to the auto immune disorders compare to men. The immune system's blood cells help defend the body from dangerous chemicals. Bacteria, viruses, poisons, cancer cells, and blood and tissue from outside the body are all examples. Antigens are present in these substances. Antibodies against these antigens are produced by the immune system, allowing it to eradicate these dangerous molecules. Several autoimmune disorders have similar early signs such as fatigue, achy muscles, edema and erythema, low grade fever difficulty focusing numbness, hair loss, skin rashes etc.

### Diagnosis

Typically, diagnosis begins with looking into a patient's family's history for genetic predisposition. This is paired with multiple testing, as no one test can detect an autoimmune illness.

**Antinuclear antibodies:** A test for detecting abnormal proteins called antinuclear antibodies, which are produced when the body attacks its own tissues. It may test positive in a variety of disorders. This test is most effective for identifying systemic lupus erythematosus, with a 95% positive test rate.

**Total blood count:** A test that measures the maturity, count, and size of blood cells. Red blood cells, white blood cells, hemoglobin, hematocrit, and platelets are among the cells targeted. Underlying medical issues may be present based on increased or decreased numbers in these counts; generally, autoimmune illness is reflected by a low white blood cell count (Leukopenia). Additional testing is required for a proper diagnosis.

**Complement:** A blood test that measures the amount of complement, an immune system protein group, in the blood. If complement levels are low, this might be a symptom of illness.

**C-Reactive Protein (CRP):** C-reactive protein, a protein produced in the liver, rises with inflammation and may be elevated in autoimmune illness.

**The rate of erythrocyte sedimentation:** The rate at which a patient's blood cells descend in a test tube is measured by this test. Rapid descents may be a sign of inflammation, which is a common symptom of autoimmune disease.

### Treatment

Therapies cannot cure autoimmune disorders, but they can moderate the hyperactive immune response and lessen or eliminate pain and inflammation. Among the medications used to treat these conditions are:

- Immunosuppressive drugs such as ibuprofen (Motrin, Advil) and naproxen (Naprosyn) are examples for Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) is used to reduce the inflammation.
- Glucocorticoid is used to reduce the inflammation.
- Disease-Modifying Anti-Rheumatic Drugs (DMARDs) are used to decrease the damaging tissues and organ effects of the inflammatory autoimmune response.

There are various treatments available to alleviate symptoms such as pain, swelling, exhaustion and skin rashes. Consuming a healthy diet and exercising regularly may helps to improve the quality of life. These therapies are less hazardous to the patient and have more precise goals. Among these alternatives are:

- Monoclonal antibodies capable of inhibiting pro-inflammatory cytokines.
- Antigen-specific immunotherapy in which allows immune cells to target the aberrant cells that cause autoimmune illness.
- Co-stimulatory blocking inhibits the route that leads to the autoimmune response.
- Regulatory T cell treatment is a sort of T cell therapy that uses this specific type of T cell to inhibit the autoimmune response.

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**Received:** 27-Feb-2023, Manuscript No. JCCI-23-22350; **Editor assigned:** 01-Mar-2023, Pre QC No. JCCI-23-22350 (PQ); **Reviewed:** 16-Mar-2023, QC No. JCCI-23-22350; **Revised:** 23-Mar-2023, Manuscript No. JCCI-23-22350 (R); **Published:** 31-Mar-2023, DOI: 10.35248/2155-9899.23.14.684

**Citation:** Zhao X (2023) Overview of Pathophysiology Involved in Autoimmune Disease. J Clin Cell Immunol. 14:684.

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