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# Role of Immunotherapy in Treating Autoimmune Disorders

**Ronald Chamberlain***

*Department of Pathology, Rutgers University, New York, United States of America*

*Corresponding author: Ronald Chamberlain, Department of Pathology, Rutgers University, New York, United States of America; E-mail: ronald@inf.edu

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## Description

Autoimmune disorders are a group of conditions where the body's immune system mistakenly attacks its own healthy tissues, leading to chronic inflammation and tissue damage. These disorders can affect any part of the body, including joints, muscles, skin, and organs. They are often chronic, debilitating, and difficult to treat, with conventional therapies often providing only limited relief. Immunotherapy is a promising new approach to treating autoimmune disorders, which aims to modulate the immune system, either by boosting or suppressing its activity, to achieve better disease control. Unlike traditional therapies, which target the symptoms of autoimmune disorders, immunotherapy seeks to address the underlying immune dysfunction responsible for the disease [1-3].

One type of immunotherapy used to treat autoimmune disorders is Immune Checkpoint Inhibitors (ICIs), which target specific molecules on immune cells called checkpoints. Checkpoints normally act as brakes on the immune system to prevent it from attacking healthy tissues. However, in autoimmune disorders, these checkpoints can become overactive, leading to an uncontrolled immune response. By inhibiting these checkpoints, ICIs can unleash the immune system to attack cancer cells or other targets. ICIs have shown great promise in the treatment of several autoimmune disorders, including rheumatoid arthritis, lupus, and multiple sclerosis. For example, studies have shown that treatment with ICIs can significantly improve symptoms and reduce disease activity in patients with rheumatoid arthritis. Similarly, in patients with lupus, treatment with ICIs has been shown to decrease production of autoantibodies and reduce disease flares [4].

Another type of immunotherapy used in autoimmune disorders is Adoptive Cell Therapy (ACT), which involves extracting immune cells from the patient, modifying them in the laboratory to target specific antigens, and then reinfusing them into the patient's body. ACT has been used successfully in the treatment of cancer, but its use in autoimmune disorders is still in its early stages [5,6].

It has shown promise in the treatment of type 1-diabetes, a chronic autoimmune disorder in which the immune system attacks the insulin-producing cells in the pancreas. In a recent clinical trial, patients with type 1- Diabetes were treated with autologous T cells that had been engineered to target and destroy the immune cells responsible for the disease. The treatment resulted in a significant reduction in disease activity and an increase in insulin production. Another promising area of research in immunotherapy for autoimmune disorders is the use of biologic therapies, which are drugs made from living cells that target specific components of the immune system. Biologics have been used successfully in the treatment of rheumatoid arthritis, psoriasis, and inflammatory bowel disease, among others. One type of biologic therapy used in autoimmune disorders is monoclonal antibodies, which are laboratory-made proteins that mimic the immune system's natural antibodies [7-9]. Monoclonal antibodies can target specific molecules in the immune system that are involved in autoimmune disorders, such as tumor necrosis factor-alpha in rheumatoid arthritis and interleukin-17A in psoriasis.

Another type of biologic therapy is used in autoimmune disorders is cytokine blockers, which are drugs that inhibit the action of specific cytokines, molecules that regulate the immune response. For example, the drug tocilizumab targets Interleukin-6 (IL-6), a cytokine that is involved in the development of rheumatoid arthritis and other autoimmune disorders [10].

## References

1. Jung SM, Kim WU (2022) Targeted immunotherapy for autoimmune disease. Immune Netw 22.
2. Uricoli B, Birnbaum LA, Do P (2021) Engineered cytokines for cancer and autoimmune disease immunotherapy. Adv Healthc Mater. 10:2002214.
3. Brusko TM, Putnam AL, Bluestone JA (2008) Human regulatory T cells: Role in autoimmune disease and therapeutic opportunities. Immunol Rev 223:371-390.
4. Ciccocioppo F, Bologna G (2020) Neurodegenerative diseases as proteinopathies-driven immune disorders. Neural Regen Res 15:850.
5. Mastrandrea LD (2015) An overview of organ-specific autoimmune diseases including immunotherapy. Immunol Investig 44:803-816.
6. He XS, Gershwin ME, Ansari AA (2017) Checkpoint-based immunotherapy for autoimmune disease-opportunities and challenges. J Autoimmun 79:1-3.
7. Golshani G, Zhang Y (2020) Advances in immunotherapy for colorectal cancer: A review. Therap Adv Gastroenterol 13:1756.
8. Stanford SM, Bottini N (2023) Targeting protein phosphatases in cancer immunotherapy and autoimmune disorders. Nat Rev Drug Discov 1-22.
9. Ballesteros A (2014) Beyond regulatory T cells: The potential role for IL-2 to deplete T-follicular helper cells and treat autoimmune diseases. Immunother 6:1207-1220.
10. Van Sorge NM, Van Der Pol WL (2003) FcγR polymorphisms: Implications for function, disease susceptibility and immunotherapy. Tissue Antigens 61:189-202.

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