

Cytokine Intervention Shows Promise For Fighting The Painful Inflammation Of Rheumatoid Arthritis

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New methods of modifying the immune response are showing great promise in the treatment of rheumatoid arthritis. One of these methods is “cytokine blockade,” best shown by the success of tumor necrosis factor (TNF) blockers. Cytokines are small proteins that control the immune system. Interleukin-15, or IL-15, is a cytokine created by white blood cells that stimulates the immune system to attack an inflammation site such as the joint.

Supported by funding from the Medical Research Council, the Wellcome Trust, and the Scottish Office and Health Department, Dr. Iain McInnes and Dr. Foo Yew (Eddy) Liew of the University of Glasgow’s Centre for Rheumatic Diseases, Division of Infection, Inflammation and Immunity began to research the role of IL-15 in the late 1990s.

“ They discovered that IL-15 activity in the joints of patients with rheumatoid arthritis actually stimulated the production of TNF-alpha, a molecule known to contribute to inflammatory

damage because of the existing drugs referred to above.

Further work with a European biotechnology company that manufactured human antibodies to IL-15 showed that the antibodies blocked the activity of IL-15 in the laboratory. The next step, phase I/II clinical trials with 30 sufferers of rheumatoid arthritis, revealed that antibody injections reduced the pain and inflammation in most subjects, with some showing dramatic improvement.

Currently, one in every hundred people develop painful rheumatoid arthritis. Research continues to show that cytokine intervention can be used to regulate the immune response, which has exciting implications for the treatment of inflammatory diseases.

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