

Corticosteroid (Prednisone) Therapy for Rheumatoid Arthritis

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Rheumatoid arthritis (RA) is a chronic, inflammatory disease, which causes damage to the joints. Symptoms of RA include pain, heat and swelling of multiple joints, tiredness, and stiffness in the morning, which may last throughout the day. There are many causes of RA but the disease is brought about when one's immune system does not function properly. This imbalance in the immune system causes the body to be unable to recognize its own joint tissues and the body responds by trying to remove or "kill" the joint tissues. The result of this process is the release of a wide range of chemicals that are destructive to various parts of the body, particularly the joints.

A number of chemicals are associated with this immune system response. For example, tumor necrosis factor and interleukin 6 are increased in the bloodstream and joints of patients with RA. These chemicals keep up the immune process that causes the destruction of joints. Research studies have identified these chemical "mediators" to be at their highest levels in the middle of the night during sleep. The increased levels of these mediators may be associated with the common symptoms of early morning stiffness and joint pain.

Current treatment of RA is focused on controlling the amounts of these chemical mediators, which cause inflammation. Returning balance to the immune system allows it to protect the body from infections and reduce the destruction that is caused by the overactive system.

There are a number of drugs that are capable of decreasing the levels of the chemical mediators of inflammation. One of the drugs that has been available for decades for



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the treatment of RA is corticosteroids, also known as prednisone. Corticosteroids have been used alone or in combination with other anti-inflammatory drugs for the treatment of RA. Corticosteroids are capable of decreasing the heat, swelling, and stiffness that occurs when joints are inflamed. As with any drug, there can be side effects. Ongoing high doses of corticosteroids have been associated with diabetes, high blood pressure, and osteoporosis. However, lower doses are associated with fewer side effects and are effective for many patients.

Prednisone, the most commonly prescribed corticosteroid, is usually taken in the morning, however research has shown that the chemical mediators of inflammation are highest during the night while individuals are sleeping. To get the greatest benefit from prednisone for treating the morning stiffness, one would need to take the prednisone in the middle of the night, which would result in the highest level of the drug being available in the morning when the symptom of stiffness is the highest. Since taking medicine in the middle of the night is not convenient, a modified release prednisone has been developed that allows for the drug to be taken at bedtime (10:00 PM) and be at its peak in the morning to treat the stiffness. More effective dosing of medicine — having medicine available at the time it is needed — can result in better control of symptoms of RA. With fewer symptoms and improved control of disease activity, drug doses can be decreased. The goal of RA treatment with prednisone is to use the lowest dose that can control the disease. Modified-released drug therapies are one of the ways this goal can be achieved. ●

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