

## Effect of Rituxan in Lupus Nephritis

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### DESCRIPTION

Lupus nephritis is a kidney inflammation caused by the autoimmune disease Systemic Lupus Erythematosus (SLE or lupus). Lupus nephritis can cause a gradual decrease in kidney function and in the most severe cases, kidney failure. Around one-third of persons with SLE develop lupus nephritis. Lupus nephritis is most common and severe consequence of lupus, in which the body's immune system attacks healthy tissues and cells, producing inflammation and causing damage to various organs including the skin, joints, kidneys, and brain. Lupus nephritis can also lead to renal failure or loss of function. Approximately 30-40% of the 400,000 patients with lupus have lupus nephritis. Weight gain, elevated blood pressure, dark urine, and swelling (edema) around the eyes, legs, ankles, and fingers are all common side effects. There is currently no treatment for lupus or lupus nephritis. Rituxan is an antibody developed by biogen idec and approved by the FDA in November 1997. It was used for the treatment of refractory low-grade or follicular B-cell non-lymphoma-Hodgkin. In June 1998, it was also authorised in the European Union under the brand name mabthera. Rituxan was approved by the FDA in February 2006 for the treatment of Diffuse Large B-Cell Lymphoma (DLBCL) patients. It is used along with the combination of cyclophosphamide, doxorubicin, vincristine, and prednisone or other anthracycline-based chemotherapy treatments. Rituxan was used in combination with MTX for the treatment of adult patients with moderate-to-severely active RA who had an inadequate response to one or more TNF antagonist treatments. Rituxan was licensed in January 2008 to decrease the course of structural damage in adults with moderately to highly active RA who had failed to respond to one or more TNF-antagonist treatments. Rituxan is the first RA medication that targets CD20-positive B-cells, a kind of immune cell. Rituxan does not affect every part of the immune system.

A research is carried out on patients with Class III or IV lupus nephritis from roughly 60 locations in the United States, Canada, Mexico, Argentina, and Brazil participated in this Phase III randomised, double-blind, placebo-controlled multi-center trial. Participants were given mycophenolate mofetil (MMF) and

corticosteroids before being randomly assigned to rituxan or placebo in two 15-day infusions. The patients were given the same treatment six months later. MMF is a kind of immunosuppressive medication that is often used to treat lupus nephritis. At weeks 24 and 52, patients were assessed for effectiveness. Patients are observed for at least 78 weeks in the majority of cases.

After 52 weeks of treatment, the proportion of patients who achieved a complete renal response like significant reduction of disease activity from baseline, including the normalization of kidney function or a partial renal response (reduction of disease activity from baseline, but no further loss of kidney function) as measured by improvements in renal function, urinary sediment, and proteinuria was the primary endpoint of the study. Proteinuria is a well-known indicator of kidney injury and refers to an abnormal quantity of protein in the urine. The study's detailed safety data is now being analyzed. Between the rituxan and placebo treatment groups, the frequency of overall adverse events and severe adverse events such as infections and infusion responses was equal. There are major side effects caused due rituxan. The companies are still keeping an eye on rituxan's long-term safety.

### CONCLUSION

Rituxan is also being researched for treatment of additional autoimmune disorders with significant medical requirements, such as Antineutrophil Cytoplasmic Antibody (ANCA)-related Vasculitis. Rituxan has over ten years of clinical experience in all diseases and over one million patient exposures across the world. Rituxan does not target stem cells in the bone marrow, and B-cells. The patients may normally regenerate and recover to normal levels in around 12 month's retreatment with rituxan. In individuals with lupus nephritis, rituxan did not demonstrate a significant effect. Researchers are looking for innovative ways to treat lupus using the information gained from this study.

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