

Lupus Update with Dr. Robert Katz

Are there any new treatments for lupus?

Advancing treatment for lupus has become an important goal of the pharmaceutical industry and of physicians. Finally, scientists have gotten around to developing new and hopefully better treatments for lupus. Current treatment generally involves hydroxychloroquine (an old antimalarial drug), prednisone (a steroid), and immunosuppressants. These immunosuppressants tend to affect the entire immune system and are often used in higher doses for kidney transplants, heart transplants, and cancer chemotherapy.

Before getting approved by the FDA, drugs need to graduate through three clinical trial phases. First, the experimental drug has to be given to animals first for safety reasons. Then small studies are done to determine the optimal dose of the medication before large numbers of subjects are subjected to it. The large studies, called “Phase 3 Clinical Trials” by the FDA, are on-going for several new medications.

Benlysta was approved by the FDA to treat lupus in 2011; however, there are several drugs in phase III clinical trials right now. These new drugs are similar to Benlysta in that they are B cell antagonists. Why are B cell antagonists so important in treating lupus?

Lupus appears to be caused, at least in part, because of small proteins in the blood called antibodies that are misdirected. Instead of targeting viruses, bacteria, and other foreign, potentially injurious agents, these antibodies connect with and neutralize different body chemicals. Some of these are the body’s DNA (anti-DNA antibodies), as well as internal cell constituents, including ribonucleoprotein, substances called “Ro” and “La” and also “Sm” to name a few. Antibodies are made by cells in the body called plasma cells and lymphocytes. The type of lymphocyte that makes antibodies is called a “B cell.” The new drugs in development, like Benlysta, target these B cells and are called B cell antagonists.

Besides being a B Cell antagonist, Benlysta is also a biological. That means that it is not made in a chemical factory and not synthesized in a manufacturing process. Rather, it is developed in living organisms and cells of the body placed into tissue culture test tubes. Benlysta is then given to patients by intravenous infusion and has been shown to reduce the intensity of the autoimmune antibody response. Other B cell antagonists are being developed. Two of these are Epratuzumab and LY2127399.