



Conquer MG Grant Recipient - 2017
Kevin O'Connor, PhD, Yale University
"Targeting the Pathogenic B Cells in Myasthenia Gravis"

Dr. O'Connor explains his study as follows: Several fundamental aspects of MG autoimmunity are not understood. One is that the immune system dysfunction, which allows the development of an immune response to self (autoreactivity), has not been elucidated. Another is that the autoantibody-producing cells have not been identified.

In order to develop better and more personalized therapeutics for MG and to understand the disease pathology, these gaps in our knowledge need to be eliminated. To this end, we will determine how dysfunctional B cells escape checkpoints that normally control autoimmunity and we will also identify the specific cells that produce the disease-causing autoantibodies. We will bring a unique approach to solve this problem by studying MG patients undergoing treatment with the drug rituximab. Utilizing specimens from such patients will permit us to study the MG immune system during dysfunction in untreated patients, and then after treatment when clinical improvement is evident, thus allowing us to identify contributors to the autoimmune process.

This mechanistic study will define the immunological events that both initiate and propagate this disease, thereby providing fundamental insight into the mechanisms of MG pathology and how the treatment affects clinical improvement.