



2025 Pilot Research Grant

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Project Title: Exploratory Proteomic Analyses in Sjögren's-related dysautonomia

Sjögren's Disease (SjD) manifests as dry eyes and dry mouth due to inflammation and damage of the glands that produce tears and saliva. Dryness, joint pain, arthritis, and fatigue severely impact the quality of life of SjD patients. The autoimmune attack extends beyond the joints and glands in a large proportion of patients, and amongst the many organs that can be impacted by SjD is the nervous system. The autonomous nervous system (ANS), which controls involuntary bodily functions such as heart rate, blood pressure, sweating, and movement of the gastrointestinal tract, has been estimated to be affected in up to half of all SjD patients. The most commonly reported symptoms are lightheadedness and dizziness when standing up, fainting, excessive or decreased sweating, blurred vision, nausea, palpitations and weakness. ANS dysfunction also worsens some of the classical SjD symptoms, including decreasing the production of tears and saliva, worsening fatigue, and disrupting the immune response. While research points to strong connections between the nervous and immune systems, little is known about the connection between SjD and autonomic dysfunction. In this study, we will screen a large group of patients with confirmed SjD for symptoms of autonomic neuropathy and evaluate the resulting impact on their quality of life and SjD symptoms. A group of SjD patients with strong symptoms of autonomic dysfunction and a matched group of SjD patients without evidence of autonomic dysfunction will be evaluated in our clinic for heart rate and blood pressure abnormalities. A sample of their tears and blood will be analyzed with cutting-edge technology to identify a >1000 inflammatory proteins and their relationship to symptoms and quality of life. Our short-term goal is to generate sufficient data to secure additional funding and expand this study with the long-term goal of identifying better diagnostics for SjD-autonomic neuropathy and potential targets for treatment.