Accelerated Cure project for multiple sclerosis

Accelerating research towards a cure for multiple sclerosis

The ACP Repository – "A unique resource that creates a lot of unparalleled opportunities to look at many different questions"

Dr. Farren Briggs has been keeping us up to date on trending topics in MS research through his column in the ACP newsletter since March 2017. Farren is an Assistant Professor in the Department of Population and Quantitative Health Sciences in the School of Medicine at Case Western Reserve University. His research focuses on the epidemiology of multiple sclerosis (MS), including understanding genetic drivers of the disease to healthcare utilization patterns. When asked what sparked his interest in the epidemiology of MS, Farren states, "I was first interested in biostatistics, but then I discovered epidemiology. I realized that I didn't want to just *answer* questions, which is what biostatisticians do… I wanted to *ask* the questions relevant to understanding human health and disease. As for MS, I happened into a project studying smoking in MS, and the more I read, the more I realized how little was known of the underlying mechanisms contributing to MS – and I saw the tremendous need and opportunities to do important work."

Dr. Briggs' recent research focuses on the impact of obesity on the early clinical presentation of MS. Using data from approximately 1,500 participants in the ACP Repository, Farren examined the relationship between established MS risk factors (things associated with the onset of MS), such as smoking status, obesity, history of infectious mononucleosis, education level (a proxy for socioeconomic status), and genetic risk factors. He hypothesized if these things affect the onset of MS, they likely also influence other aspects of MS early in the disease process, such as the age of onset; the time between first relapse and second relapse; the diversity of symptoms at onset; and the number of relapses in the first two years (disease activity). Data showed obesity was associated with an older age of onset, increased diversity of symptoms at onset (meaning more symptoms across various systems), shorter times between the first two relapses, and 25% increase in early disease activity. In Farren's words, "These things have not really been explored before, and it's important to investigate factors influencing early disease as it might be suggestive of factors influencing long-term outcomes. I looked at obesity because it has recently been established as a risk factor for MS (in the last 3 or 4 years) – and it is something *modifiable*... We had a wealth of information that was available through ACP that we considered in these models. We ran four models, one for each of the outcomes, and surprisingly, obesity was associated with all of them."

Dr. Briggs presented these data at the 2018 annual meeting of the Consortium of Multiple Sclerosis Centers (CMSC) in late May. Each year poster and platform presentation awards are given to researchers doing unprecedented high caliber research. These are studies that can be applied to clinical practice and benefit the comprehensive care of MS patients. Dr. Briggs was awarded the **Best Platform in MS Research Award** at this year's meeting for his presentation of these findings.

These interesting results warrant further study into the impact of these and other characteristics that influence MS diagnosis and disease progression. However, according to Farren, further study in this area will be a challenge. In his words, "There are very few data sets that have the wealth of information to replicate these associations, hence the importance of the ACP Repository and iConquerMS. The ACP Repository is unique because it has several aspects that are really rare. Generally, you'll find large studies of MS that have only genetic information, you'll have several studies that have clinical data, and a few with environmental history and more nuanced questions. Here we have all three data types captured within one single data set. It is quite a *unique* resource that creates a lot of unparalleled opportunities to look at many different questions."