STOP – Immunology

Research Grants:
Mayo Clinic College of Medicine researchers are investigating a beneficial bacteria found in the human gut for clues to developing a novel therapeutic strategy for MS.

Title: "Therapeutic potential of combination therapy using Human Gut-derived commensal bacteria and conventional MS drugs"
Term: 10/1/2014 - 9/30/2017

Lead Investigator: Ashutosh Mangalam, PhD
Mayo Clinic College of Medicine, Rochester, MN

Dr. Ashutosh Mangalam is an assistant professor of Immunology and Neurology at the Mayo Clinic College of Medicine (Rochester, MN). He received his bachelor's in biology from Lucknow University in India and his PhD in immunology from Sanjay Gandhi Post Graduate Institute (SGPGI) of Medical Sciences. Dr. Mangalam is the Associate Director of the Federation of Clinical Immunology Societies Center of Excellence at the Mayo Clinic. He has received several awards including the Senior Research Fellowship award from SGPGI, the GP Talwar Young Scientist award at the 27th Annual Conference of the Indian Immunology Society, and the American Association of Immunologists Junior Faculty Travel Awards for Immunology.

Background:
MS involves immune-system attacks against the brain and spinal cord. The gut, including the small and large intestine, is the largest immune organ in mammals. Each of us has trillions of "commensal" bacteria living within our guts. Most of these bacteria are harmless as long as they remain in the inner wall of the intestine. They play a critical role in our normal physiology, and accumulating research suggests that they are critical in the establishment and maintenance of immune balance by the molecules they release. One species of bacteria found in the gut called Prevotella histicola may possess beneficial anti-inflammatory properties.

The Study:
Ashutosh Mangalam, PhD, of the Mayo Clinic College of Medicine in Rochester, MN has received a research grant from the National MS Society to investigate the beneficial effects of Prevotella histicola in modulating the immune system in two mouse models of MS. Previous studies have shown that this bacteria suppresses the disease onset and severity of EAE, one of the most widely used models for MS. Dr. Mangalam and co-investigator Dr. Moses Rodriguez are now investigating the effects of Prevotella histicola alone and in combination with the currently approved MS therapies, interferon beta and glatiramer acetate. These experiments are being performed in EAE and another MS model.

What's Next?:
The results from this study could pave the way for new oral treatments based on gut bacteria that can modulate the immune response in MS.