

Antara Gupta

Mr. Speice

Independent Study & Mentorship

7 January, 2018

Delving into Disorders

Assessment 11 - Mentor Visit

Mentor: Dr. Dike

Profession: Neurologist

Location: Affinity Neurocare 3388 Main St. #100 Frisco, TX 75033

Date: January 7th, 2019

Time: 6:00 p.m - 7:00 p.m

Assessment

Continuing on with my mentorship, I met with Dr. Dike to further discuss the disorders that are the focus of my original work. Thus, the main purpose of this mentor visit was to reaffirm my understanding on Guillain-Barre Syndrome (GBS) and Bickerstaff's Brainstem Encephalitis (BBE) so that I could start researching using Dr. Dike's post-graduate-level academic resources. To start off, I gave Dr. Dike a brief summary of all that I had learned from the independent research I conducted at home. Through my research, it became apparent that both Guillain-Barre Syndrome and Bickerstaff's Brainstem Encephalitis are autoimmune disorders that are often caused by the development of the Anti-Gq1b antibody post-infection.

Usually, these disorders have similar symptoms of weakness and fatigue, and they progress very quickly. However, the biggest difference between the two disorders is that GBS affects the peripheral nervous system whereas BBE involves the midbrain and pons medulla, leading to more serious symptoms.

Because the article had not explained the actual science and biology behind the disorders, Dr. Dike helped clear my misconceptions. He started off with a quick recap on the lymphatic system, and thanks to AP Biology with Ms. Parker, I was able to remember everything. Dr. Dike then got into the five different types of antibodies, and he focused in on IGM and IGG, which are responsible for acute and chronic infections respectively. As these antibodies develop, often times, they confuse proteins that are similar to viruses and bacteria as the infectious agent themselves and start attacking it. As a result, this leads to damage of a neuron's axons and myelin sheath. This conversation eventually brought up the field of neuro-immunology, and it was quite interesting to learn about all the different subfields within neurology, with each one more intricate the previous one. This reminded me of my interview with Dr. Aiyagari, and how his career in neurocritical care was a field that had only recently developed: this shows that the medical field is always expanding.

My discussion with Dr. Dike made me think about vaccines, and since they are essentially injections of live viruses, I was curious whether they could give rise to GBS and BBE as well. Dr. Dike confirmed my hypothesis and he said that it is because of this that vaccines are getting a bad reputation in society, but as medical professionals, it is our responsibility to quell those fears. This made me realize that even though there are multiple specialties and

subspecialties within medicine, all medical professionals are united by simply one goal: to protect the livelihood of their patients.

Moving on from this research-heavy discussion, Dr. Dike and I then talked about the next steps for my original work. Previously, the plan was that I would write two different case studies on GBS and BBE, and then commence my research with a report that compared the two disorders. However, after much discussion, we decided that it would be best if I created an infographic over the similarities and differences between GBS and BBE so that it would be more interactive and even useful for his patients. This plan is much better because not only do I get to help medical professionals using the case studies, but I also get to help patients by creating the infographic.

As both my mentorship and original work progress, I am quite excited to see all the knowledge and experience that I will be able to accumulate in just one year.