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This Winter issue of our quarterly newsletter brings good news for our patients. We are very pleased to announce that Dr. Joshua A. Tobin has joined us as a Consulting Neurologist. He is board-certified in neurology and brings to our clinic expertise in migraine, movement disorders, and general neurology. 21st Century Neurology was founded in April of 2001 and has since grown tremendously. Neurology continues to be a vast field which focuses on conditions affecting the body's nervous system: the brain, spinal cord, muscles and nerves. As of now, methods are being developed to help diagnose and treat conditions such as Multiple Sclerosis, Alzheimer's disease, Parkinson's disease, epilepsy, peripheral neuropathy, migraine and atypical pain syndromes like postherpetic and trigeminal neuralgias. We are recruiting for several clinical trials aimed at providing new therapeutic approaches to these diverse conditions. If you or someone you know is interested in a clinical trial, please call us or see our website for updated information.

The word 'dementia' is often confusing. It is not a diagnosis but simply a label for a process where there is slow change in memory and thinking. Alzheimer's disease is the most common cause of dementia, accounting for 67% of patients presenting with these symptoms. Lewy Body disease accounts for another 18%, and is the second most common cause of dementia. The rest of the time, dementia is caused by many different conditions, many of which are reversible if detected early. These include lack of thyroid hormone, low vitamin B₁₂, and normal pressure hydrocephalus (treated with shunt surgery). Also, some infections affect the brain, including HIV and neurosyphilis, and the latter at least is often fully eradicable with currently available antibiotics.

In the news for patients with MS, the IV therapy Tysabri has been again approved for use once monthly. It has a published ~60% reduction in relapse rate. It is now available through a special program called TOUCH which your neurologist can register to prescribe Tysabri. The program is designed to protect patients against a rare side effect of therapy called PML (*progressive multifocal leukoencephalopathy*) where a virus which is normally dormant in the brain can reactivate with serious consequences. This happened in 1 of 1,000 patients in clinical trials with Tysabri and led to the drug's suspension two years ago. Patients who were doing well with Tysabri were instrumental in its recent reapproval. Based on current information, performing a blood test called Absolute Lymphocyte Count before each infusion the patient's safety can be assured to a greater degree.

A desirable goal in MS is an all-oral treatment regimen. Novartis Pharmaceuticals (Basel, Switzerland) announced positive results in a Phase II trial in relapsing-remitting multiple sclerosis. A large Phase III trial is under way. Other oral agents have included steroids, Cytoxan, Imuran, Cyclosporine and Cellcept.

Vaccine approaches to conditions like MS where the immune system attacks the nervous system have been discussed for more than 20 years, but are only now becoming a reality. These involve active immunization, in which a preparation given to patients by injection teaches the immune system to attack a disease process, typically by making one's own antibodies. Xenoscience is now offering a phase II trial of a T-cell vaccine for relapsing-remitting multiple sclerosis and clinically isolated syndrome (often the first sign of MS). The sponsor of the trial has also had early success in trials outside the US in other autoimmune diseases. The vaccine tested by Elan (Dublin, Ireland) called AN1792 for Alzheimer's disease was not successful due to harmful side effects, but there is hope for a reformulated version of the original vaccine, ACC-001, now in Phase I trials. Elan has also tested passive immunization, in which antibodies made in a laboratory eliminate the plaque protein that causes Alzheimer's disease.

New ideas abound in Alzheimer's disease. Xenoscience is now recruiting participants in trials of novel agents which act to increase brain cell firing rates, overall improving memory and thinking capacity; improve sugar entry into brain cells using an approved drug for diabetes; and act on novel serotonin receptors to make existing drugs work better. All of these approaches may indirectly affect the progression of the disease, but their current trials are focused on improving symptoms.

Strong effects in phase II and record enrollment in phase III characterizes Flurizan, the drug from Myriad (Salt Lake City, Utah). We are now enrolling in a global Phase III trial to test Flurizan's plaque-inhibiting and plaque-clearing effects.

The XEN Institute, a not-for-profit foundation affiliated with Xenoscience, is pleased to announce that it has received a grant from Teva Pharmaceuticals (Netanya, Israel) to study genomics in patients with neurological diseases like multiple sclerosis. Genomics is the study of all of the genes at once, trying to get a better understanding of how all 25,000 human genes interact in an individual. It grew out of the science of the successful Human Genome Project which in 2000 figured out the sequence of three billion letters (A, C, T, and G) which make up human DNA. Once the project was done, the real work has begun—unraveling how all the genes talk to each other to make a person, and how they work with each other in health and in illness.

Sleep affects memory. Recent advances in the science of sleep make it clear that without good sleep, memory and daytime cognitive performance are affected adversely. Our neurologists are offering sleep studies to find out if sleep problems like poor breathing during sleep are causing forgetfulness in patients. These problems are often readily treatable, sometimes even without medication. ✱