Molecular Dysfunction in CFIDS/FM being Revealed

While Chronic Fatigue Syndrome and Fibromyalgia have been recognized for many years, their underlying cause has been poorly understood. One important and interesting aspect of these conditions is the unusual susceptibility of individuals to a variety of chronic infections. These infections include viruses such as Epstein-Barr (EBV), HHV-6, enteroviruses and Cytomegolvirus (CMV), bacteria such as Mycoplasma and Chlamydia Pneumonia and yeast such as Candida. This unusual susceptibility to infections is suggestive of impaired immunity, but no single, consistent immune defect is observed although a number of deficiencies have been reported.

Recent advances in the study of intracellular communication are providing key insights into the immunological defect that may be underlying Chronic Fatigue Syndrome and Fibromyalgia. A number of research groups have reported an abnormality of an enzyme called human leukocyte elastase (HLE). This abnormal elastase enzyme degrades two important proteins required for normal immune function. One protein is called STAT1 and the other one called RNase-L, which are required for the white cells to utilize interferon and respond to the types of infections seen with these conditions. Consequentially, CFIDS and FM patients are not able to eradicate chronic infections like those without these conditions.

For instance, it is not uncommon for patients to be able to point to a viral infection that they never fully recovered from. In normal individuals, the virus "runs its course" and is cleared in days to weeks. With Chronic Fatigue Syndrome and Fibromyalgia, the body is not able to completely rid the body of the virus. This results in a chronic low grade infection, causing fatigue, muscle pain and the other symptoms commonly seen in these conditions. The viruses often have intermittent replication, resulting in the varying nature and periodic worsening of symptoms often seen with these conditions. A number of methods have already been developed to suppress this abnormal elastase enzyme. We currently use a number of them in the Centers, which include both natural and prescription medications.