

August 08/07: New Predictors of Disease

Working in the field of autoimmunity it quite often occurs that you are asked to explain autoimmunity, autoantibodies or the diagnostic use of autoantibodies and it becomes rapidly apparent that it is not easy to explain these complex issues. Scientific American is a popular-science magazine, which brings articles about new and innovative research to the amateur and lay audience. It is a well-respected publication despite not being a peer-reviewed scientific journal. In the March issue of 2007, Abner Louis Notkins from the National Institutes of Health (NIH) wrote an easy to understand, but not simplistic, article about autoantibodies as predictors of disease:

Notkins AL

New Predictors of Disease

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The idea that autoantibodies might serve as early warning signs of later disease came from research into how type 1 diabetes arises. The discovery that autoantibodies frequently herald the onset of type 1 diabetes prompted scientists to examine whether the same might be true in other autoimmune diseases. One that has been the focus of especially intense research is rheumatoid arthritis. Antibodies against citrulline often appear in the bloodstream before the first symptoms turn up, in some cases more than 10 years earlier. The knowledge that the anticitrulline autoantibody might serve as a predictive marker is particularly exciting because, in contrast to the situation in type 1 diabetes, doctors already have medicines that might be delivered to prevent or slow the onset of arthritis. For certain other autoimmune disorders, the detection of predictive autoantibodies could potentially enable people to shut down autoimmune activity by avoiding certain triggers in their environment. A case in point is celiac disease. Autoantibodies against tissue transglutaminase emerge up to seven years before symptoms do, suggesting that high-risk individuals might forestall the disease entirely by eliminating gluten from their diet. This idea has not yet been tested, however.

Forecasts of the future have always intrigued and frightened people. Handled properly, though, such knowledge could benefit the millions of patients and doctors destined to battle autoimmune diseases.

