News
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*****Genetics and infection as causes of arthritis of the spine need further study.

DALLAS -- Several important scientific conclusions were reached at the First International Conference on the Spondyloarthropathies held at The University of Texas Health Science Center at Dallas May 31-June 2. The spondyloarthropathies are forms of arthritis that commonly include arthritis of the spine.

Sponsored by the Harold C. Simmons Arthritis Research Center, the conference was attended by 25 invited presenters, health science center faculty and Dallas rheumatologists in private practice. "This was the first time these people, the top researchers on this disease, were ever together in one room in the world," said Dr. Stanley Cohen, co-chairman of the conference. "It was also the first time infectious disease researchers, immunologists and geneticists have been together to discuss the disease."

In his concluding statement at the end of the conference, Dr. Morris Ziff, director of the Simmons Arthritis Research Center and co-chair of the conference, said the researchers reached consensus on several controversial issues.

The B27 gene is the only gene of the HLA complex (genes on the sixth chromosome that play an important role in transplant rejection) involved in the spondyloarthropathies, but other genes possibly on other chromosomes also play a role in this group of diseases. "It is certainly possible to have spondyloarthropathy disease in the absence of B27, and in such an individual, genes on other loci are involved," said Ziff. "This is based on a variety of epidemiological evidence such as the fact that black patients can get spondyloarthropathies with only a 50 percent incidence of the B27 gene whereas in white patients the incidence approaches 100 percent. In black patients one or more other genes presumably are involved."

The participants concluded that previous evidence linking ankylosing spondylitis with Klebsiella (a bacterium that causes intestinal and other infections) was not adequate to come to this conclusion, said Ziff. Klebsiella as a cause of AS has been the subject of a great deal of work in England and Australia, but the researchers agreed that the evidence for this organism as a causative agent is weak.

Other important research presented included:

In bacterial infections in the intestine, bacteria that penetrate the gut lining are more likely to trigger Reiter's syndrome than those that act on the surface, according to a paper presented by Dr. Samuel Formal of the Walter Reed Army Institute of Research in Washington, D.C.

There are two possibilities, said Ziff: If a bacterial antigen is involved, the destructiveness of the bacteria may make it possible for the antigen to penetrate the lamina propria (a thin layer of tissue beneath the epithelium) of the intestine and provoke an immune response. Bacteria that cause diarrhea by attaching to the surface of the intestine do not trigger Reiter's syndrome. The other possibility is that the more destructive bacteria may cause an autoimmune response by injuring the intestine and releasing antigens

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that stimulate an autoimmune response.

Evidence was presented by Dr. Charles van Bohemen of The University of Amsterdam that monoclonal B27 antibodies cross-react with bacterial antigens. This indicates molecular mimickry between B27 antigens and bacterial antigens and that lymphocytes responding to bacterial antigens could cross-react with B27 antigens.

Also research was presented that indicated that several forms of the B27 gene are associated with the spondyloarthropathies. The gene seems to vary in different individuals and different races.

The true frequency of ankylosing spondylitis among the population with B27 was established, said Cohen. Based on work by Dr. Sjef van der Linden of University Hospital in Berne, Dr. Andrei Calin of Royal National Hospital for Rheumatic Diseases in Bath, Great Britain, and Dr. Muhammad Khan of Case Western Reserve University, the group arrived at a consensus. Ten to 14 percent of B27 positive people who are family members of patients with ankylosing spondylitis will develop the disease. Of those who are B27 positive with no AS sibling, one percent will have the disease.

"The general feeling people went home with was there needs to be investigation chiefly in the genetic area," said Ziff. "We have to find out, for instance, whether or not the few patients with ankylosing spondylitis without B27 are able to transmit AS to their offspring. The feeling was that this does not occur.

"If possible, there should be investigation of possible inflammatory reactions in the gut to see whether or not one could identify in intestinal lymphocytes evidence of immunological activity that could be responsible for the immune response that causes the inflammation.

"It may be desirable to study lymphocytes from the synovial effusions (fluid in the joint) rather than lymphocytes from the blood to investigate their responsiveness to bacterial antigens. Synovial effusions may reflect more accurately than the blood what is going on in the joint.

"The group also thinks it is necessary in studying bacteria and their role in triggering Reiter's syndrome to get bacterial strains from countries where epidemics are known to produce RS rather than studying strains similar in name but not arthrogenic. (There have been Reiter's syndrome epidemics in Finland, for example.)

"We also want to pursue further studies of antibodies to the bacteria that trigger Reiter's syndrome to see if they are cross-reactive to the B27 gene."

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