

Workshop on the Role of HLA-B27 in Spondyloarthritis

Report

The Workshop on the Role of HLA-B27 in Spondyloarthritis funded by NIH Grant 1 R13 AR057269-01 was held in Houston, TX on July 23, 2009 at the Marriott Hotel at the Texas Medical Center. It was held in conjunction with a 3 day meeting on spondyloarthritis, organized by Dr. John D. Reveille, chief of rheumatology at UT Houston Health Sciences Center. The purpose of the workshop was to bring together the investigators who work on HLA-B27, together with others with expertise in HLA biology or other related areas. The day was divided into 4 sessions. Each session was introduced by or two brief overview presentations, followed by a general roundtable discussion. The purpose was to maximize discussion in order to achieve as much of a consensus as possible on the major areas that should be the focus of future investigation.

Speakers and their topics were:

J López de Castro (Madrid, Spain): Structure of the HLA-B27 subtypes and their peptide motifs

C López-Larrea (Oveido, Spain): Epidemiology of the B27 subtypes and disease relationships

R Sorrentino (Rome, Italy): T cell recognition of B27: evidence for & against relationship with SpA

R Colbert (Bethesda, MD): Peculiarities of B27 biosynthesis and metabolism (and unusual interactions of B27 with β 2m)

P Bowness (Oxford UK): Cellular recognition of unusual forms of B27

M Brown (Brisbane, Australia): Non-B27 genetic associations with SpA

N Shastri (Berkeley CA): The function of ERAP1

Many topics were discussed. A great deal of discussion was focused on the epidemiology and significance of different HLA-B27 subtypes, some of which have been reported not to be associated with ankylosing spondylitis. The significance of peptide binding to B27, the pros and cons of the B27 misfolding hypothesis, potential new applications for the B27 transgenic rat model, and the possible functions of ERAP1 were all extensively discussed and debated. New, unpublished genetic associations were presented. T cell and NK cell recognition were described extensively in two of the presentations and discussed by the group.

The final session, held in the evening, was intended for summing up and generating recommendations. The main recommendations for new research areas were:

- Production of transgenic rats with other HLA-B27 subtypes, including the two that are much less associated (if at all) with SpA
- Better definition of the epidemiology of the B27 subtypes, and thorough characterization of the HLA haplotypes carrying the strongly associated subtype B2704 and the non-associated subtype B2706, both found in the Far East

- Characterization of the biochemistry of surface-expressed B27 homodimers
- Characterization of peptides loaded onto B27 via the endocytic pathway
- Further characterization of SpA disease pathogenesis

No large collaborative initiatives were formalized. The PI formalized one collaboration with another investigator, and is also planning to act on at least one of the group recommendations. I do not know if other collaborations were formed, but it seems likely, given the extensive amount of public and private discussion and overlapping interests of the group. Similarly, it is likely that others will incorporate new directions into their research as a result of the workshop.

There are plans to summarize the proceedings of the entire 3 day meeting, including this workshop, in a future supplement to *The Journal of Rheumatology*. I do not know of the anticipated publication date.

I do not know of any plans for specific grant programs from the NIH.

We are very grateful to NIAMS and ORDR for funding this productive workshop.

Joel D. Taurog, M.D.