

A103 CD4⁺ T CELL RESPONSES TO EPITOPES OF SELF-HEAT SHOCK PROTEIN 70 IN PATIENTS WITH JUVENILE DERMATOMYOSITIS

EC Koffeman, EF Elst, F van Wijk, B Prakken, A van Royen-Kerkhof *UMC Utrecht, Wilhelmina Children's Hospital, Utrecht, The Netherlands*

10.1136/ard.2010.148981.6

Background and objectives Juvenile dermatomyositis (JDM) is a childhood disease characterised by inflammation in the muscle and the skin. In several human chronic inflammatory diseases CD4 T cell responses to epitopes of heat shock proteins (hsp) have been found to play a role, both pathogenic and regulatory. In JDM hsp70 is highly up regulated in the inflamed muscle. Therefore, hsp70 could be a target in the inflammatory process in JDM. Responses to hsp70 epitopes in JDM have not yet been characterised. In HLA elution studies it has become clear that epitopes from self-hsp70 are abundantly bound to HLA. In this study the authors tested whether peripheral blood CD4 T cell responses to hsp70-epitopes can be detected and whether they are different in JDM patients compared to healthy controls (HC).

Materials and methods Hsp70-epitopes were selected based on (1) literature on HLA-elution studies, (2) HLA-class II binding capacity tested with computer models and (3) in vitro responses by CD4 T cells from healthy donors. Proliferation of PBMC from healthy controls (HC, age 2–18) and JDM patients and juvenile idiopathic arthritis patients as disease controls was tested using 3H-thymidine assays and CFSE-staining. Cytokine production was tested by Luminex analysis, flow cytometry and PCR.

Results The following epitopes were selected: aa 38–52, aa 161–175, aa 290–304 and aa 443–457. These peptides were immunogenic in humans, inducing proliferation or cytokine production. The proliferation of CD4 T cells towards aa 443–457 is increased in JDM.

Conclusion The authors identified novel epitopes of hsp70 that are immunogenic in healthy donors and JDM and they found indications that the CD4 T cell response towards H443 is increased in JDM.