Pediatric Rheumatology

Oral presentation

7.1 Transgenic overexpression of CREM alpha in murine T cells results in an anergic phenotype with enhanced IL17 production

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Background and methods

The cAMP responsive element modulator CREMa is a transcriptional repressor and putatively important in T cell pathophysiology of Systemic Lupus Erythematosus (SLE). To clarify the relevance of CREMa we overexpressed CREMa under control of the T cell specific CD2 promoter in mice.

Results

As expected, overall T cell proliferation in naive T cells as response to different stimuli like anti-CD3 or an allogenic MLR was diminished in CREMa transgenic mice compared to wildtype mice, however-unexpectedly – disease activity in a contact dermatitis model was more severe in transgenic mice. Moreover, when T cells purified from the lymphnodes of the challenged ears were used for proliferation assays, transgenic T cell showed an enhanced proliferative response. Additionally, T cells from transgenic mice displayed an enhanced IL-17 production.

Conclusion

These data suggest that murine T cells with a transgenic overexpression of CREMa show an anergic phenotype in vitro, however when challenged in an in vivo disease model they react in a way, which predisposes to autoimmunity. Thus these T cells partially mimic the phenotype of human SLE T cells and support the relevance of CREMa for the pathophysiology of SLE.