We have utilized several models to describe the effects of interleukin (IL)-21 in chronic immune responses. A mouse model of chronic heart rejection was employed to demonstrate that an immune system devoid of IL-21 is largely incapable of developing cardiac allograft vasculopathy (CAV). This was true whether the transplant recipient mouse was IL-21 knockout, a deficiency resulting in lack of IL-21 production, or a wildtype mouse treated with IL-21 receptor fusion protein (IL-21R.Fc) to block IL-21 function. Furthermore, deficiency of the BATF transcription factor regulating IL-21-dependent T follicular helper (Tfh) and T helper 17 (Th17) cells prevented CAV. In contrast, a mouse model of kidney allograft rejection demonstrated no dependency on IL-21 for the development of interstitial fibrosis (IF) and tubular atrophy (TA). These results created a new paradigm that CAV depends on IL-21. Finally, we showed that IL-21R.Fc was able to permanently reverse the development of type 1 diabetes (T1D). In summation, IL-21 is a chronic phase cytokine that is critical for the development of immune responses and it can be targeted clinically for therapeutic benefit.
PUBLICATIONS


FUTURE PLANS

Caitlin plans to stay in Toledo for at least two years while she completes medical school.

ABSTRACTS & PRESENTATIONS


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