P043 miRNAs are potentially involved in posttranscriptional regulation of Bcl-2 family members after cytokine stimulation.

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Background and aim: Bcl-2 family proteins have been demonstrated involved in regulation of apoptosis with potential relevance for T1D pathogenesis. The aim was to characterize the role of miRNA in posttranscriptional regulation of chosen Bcl-2 family members in INS-1 cells.

Material and Results: INS-1 cells, stimulated with cytokines (IL-1β, IFNγ, TNF-α, or a mix), from 1 to 24h were analyzed for expression of Bax, Bid, Bcl-XL, Bak with qRT-PCR and Western blotting. IL-1β/IFNγ mix induced expression of mRNA; however this was not correlated with increased protein expression. The 3`UTR of the Bcl-2 members were analyzed for miRNA target sites that could explain posttranscriptional repression of Bcl-2 targets. Candidate miRNAs were chosen and expressionally characterized. Significant up-regulation was seen for miR-150, miR-326, and miR-133a after 12 and 24h of cytokine stimulation.

Conclusion: These studies have demonstrated Bcl-2 family member's expression to be up-regulated by cytokines on mRNA level without affecting protein level. This posttranscriptional repression by cytokines may be an important mechanism potentially involving miRNA.