



POSTER PRESENTATION

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# Changes in gd T cell function and gut homing receptors following SIV infection of rhesus macaques

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## Background

During simian immunodeficiency virus (SIV) infection changes occur in the gd TCR T cell population. The major subset in mucosal tissue, Vd1, becomes prevalent in peripheral blood relative to the Vd2 subset. gd T cells have the ability to expand in vitro and in vivo making them attractive as cytotoxic effectors against infections like SIV and HIV.

## Methods

We studied gut homing receptors and functionality of Vd1 and Vd2 T cells in blood and jejunum of naïve (8 and 3 respectively) and SIV infected (13 and 9 respectively) animals. Vd1+ and Vd2+ T cells were identified by flow cytometry using pan gd TCR-PE and Vd2-FITC mAbs. Intracellular staining for IFN-g and perforin was performed after Phorbol-Myristate-Acetate/Ionomycin stimulation.

## Results

Here, the Vd1 subset in SIV infected macaques was not significantly increased in blood, but in jejunum, Vd1 T cells became predominant compared to Vd2 T cells ( $p=0.0044$ ) and to the level in blood ( $p=0.0014$ ). Expansion of the Vd1 subset in jejunum was linked to increased expression of the a4b7 gut homing marker on peripheral blood Vd1 T cells ( $p=0.033$ ). After stimulation, Vd1 and Vd2 T cells in blood produced both IFN-g and perforin. Higher frequencies of Vd1 T cells produced perforin in SIV+ animals compared to naïve ( $p=0.0186$ ), while IFN-g producing cell frequencies decreased ( $p=0.0066$ ). Most Vd1 T cells were CD4-CD8- (DN).

Those producing perforin were also mainly DN compared to CD4+ and CD8+ Vd1 T cells ( $p=0.0156$ ).

## Conclusion

Expansion of Vd1 T cells in the jejunum is associated with increased trafficking from peripheral blood to the mucosal site. This expanded population with cytotoxic potential could contribute to viremia control.

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