

Poster presentation

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Impaired CCR7 Expression on Plasmacytoid Dendritic Cells in HIV Infected Children on HAART With Virologic Failure

Seema Desai*^{‡1}, Aida Chaparro², Huanliang Liu¹, Patrick Haslett¹, Gwendolyn Scott², Rajendra Pahwa³ and Savita Pahwa¹

Address: ¹Department of Microbiology and Immunology, University of Miami Miller School of Medicine, Miami, FL 33136, USA, ²Department of Pediatrics, University of Miami Miller School of Medicine, Miami, FL 33136, USA and ³Diabetes Research Institute, University of Miami Miller School of Medicine, Miami, FL 33136, USA

Email: Seema Desai* - SDesai@med.miami.edu

* Corresponding author ‡Presenting author

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Background

Defects of myeloid (m) DC and plasmacytoid (p) DC are well established in HIV infection. Studies in children and adolescents are limited, and have focused mainly on IFN- α function of pDCs.

Materials and methods

Patients with perinatal HIV infection (n = 19, ages 11–18 yr, on HAART) were classified as immunologic responders (IR+; CD4>25%), and virologic responders (VR; plasma HIV RNA < 400 copies/mL). mDC (Lin-, HLA DR+CD11c+) and pDC (Lin-, HLA DR+ CD11c-) were evaluated in a novel whole blood assay by flow cytometry for expression of maturation markers CD83, CD80, homing receptor CCR7 and intracellular cytokines (TNF- α and IFN- α) after short-term stimulation with a TLR7/8 agonist, resiquimod.

Results

CCR7 expression was markedly reduced in pDC of IR-VR-subjects in comparison to IRVR patients (mean 5.6% vs 43.3%). Levels of CCR7 were intermediate (mean 29.8%) in the IR+VR- group, and were almost absent in two patients with VL>100,000 copies who had a markedly reduced IFN- α production in pDC. CD83, CD80, and TNF- α were expressed in all patients and were more pronounced in mDC than in pDC.

Conclusion

The most striking finding was a reduced expression of CCR7, and is indicative of a defect in homing of the plas-

macytoid DC to lymph nodes in HIV infected children who have ongoing active viral replication and poor immunologic control in spite of HAART.