

CHARACTERISATION OF REGULATORY T CELLS IN HIV- INFECTED ADULTS IN SOUTH AFRICA

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A research report submitted to the Faculty of Health Sciences,
University of the Witwatersrand, Johannesburg, in partial fulfilment
of the requirements for the degree of Master of Medicine in the
branch of Clinical Pathology

Johannesburg, 2008

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DECLARATION

I, Melinda Shelley Suchard, declare that this research report is my own work. It is being submitted for the degree of Master of Medicine in the branch of Clinical Pathology in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other university.

My colleague has used the same sample group for further study (functional analyses) and these additional investigations will form part of a separate research report to be submitted to the University of the Witwatersrand in the future.

.....
Melinda Shelley Suchard

..... day of2008

PUBLICATIONS/PRESENTATIONS ARISING FROM THIS STUDY

Results from this study were presented in a poster format at the Keystone Conference entitled: *HIV Vaccines: From Basic Research to Clinical Trials* held in Whistler, British Columbia, Canada 25-30 March 2007.

Title: *Characterisation of Regulatory T cells in HIV and Tuberculosis Infected Adults in South Africa*

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ABSTRACT

Regulatory T cells (Tregs) are CD4⁺ T lymphocytes that express the gene *FOXP3* and suppress other cellular immune responses. Their role in HIV pathogenesis is uncertain. Regulatory T cell (Treg) levels were analysed in peripheral blood of HIV infected patients and controls in South Africa.

Immunophenotypic analysis revealed significantly elevated levels of FOXP3 positive Tregs in HIV infected patients (median 6.8%) compared with controls (median 3.7%). Treg levels were inversely correlated with CD4⁺ T cell count. FOXP3 mRNA expression was dependent on choice of reference gene (GAPDH or 18sRNA) and did not correlate with FOXP3 protein expression analysed flow cytometrically.

These findings illustrate that Tregs are elevated in the peripheral blood of patients with late stage HIV disease and suggest a role for Tregs in the clinical immune suppression seen in these patients. Tregs may prove to be useful therapeutic targets for intervention or as a prognostic monitoring tool.

ACKNOWLEDGEMENTS

Thank you to my supervisors, Prof Clive Gray, Prof Caroline Tiemessen and Prof Adriano Duse for their expertise and willingness to enable me to pursue my research goals in an unprecedented training rotation. Thank you also to Professor Barry Mendelow who is an inspirational mentor and first piqued my interest in immunology.

Heartfelt thanks to my co-conspirators Dr Elizabeth Mayne and Victoria Eastham without whom the work would not have been half as enjoyable, as well as to Samantha Donninger, Dr Sharon Shalekoff, Greg Khoury, Stephina Nyoka, Phineas Mohube, Pauline Mokgotho, Sibongile Xaba, Netty Malatsi, Dr Vivian Morafo and Mandla Mlotshwa of the NICD HIV Immunology units for training and assistance. Thanks also to Dr Guido Ferrari of Duke University, Prof Wendy Stevens, Prof Debbie Glencross and Dr Lesley Scott of Wits University and to George Makedonas of University of Pennsylvania for encouragement and guidance.

Thanks to Dr Francois Venter, Prof Jeff Wing and staff of the Johannesburg hospital antiretroviral clinic, Dr Dennis Rubel and the Helen Joseph hospital antiretroviral clinic and to the South African National Blood Transfusion Service for enabling volunteer recruitment.

This work was funded by the South African AIDS Vaccine Initiative (SAAVI), the Wellcome Trust, the National Institute of Health and the Elizabeth Glazer Paediatric AIDS Foundation International Leadership Award.

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