

# EXPRESSION OF INTRACELLULAR INTERFERON GAMMA AND PERFORIN IN T CELLS IN ACQUIRED IN ACQUIRED APLASTIC ANAEMIA PATIENTS

Vandana Sharma\*, Rajiv Kumar\*, Tulika Seth\*, Prabin Kumar#, Manju Namdeo#  
Renu Saxena\*, Uma Kanga# and D.K. Mitra#

(\*Department of Haematology, #Department of Transplant Immunology and Immunogenetics,  
All India Institute of Medical Sciences, New Delhi, India)

## Introduction

•Aplastic anaemia is characterised by pancytopenia with hypocellular bone marrow due to destruction of haematopoietic stem cells by T lymphocytes and their cytokine products.

•Interferon- gamma (IFN- $\gamma$ ) and perforin are important mediators of cell destruction.

## Objective

•To investigate the expression of intracellular IFN- $\gamma$  and perforin in T lymphocytes in peripheral blood (PB) of untreated acquired aplastic anaemia patients.

## Material & Methods

•30 patients were enrolled and stratified as per disease severity : non severe AA (NSAA), severe AA (SAA), and very severe AA (VSAA).

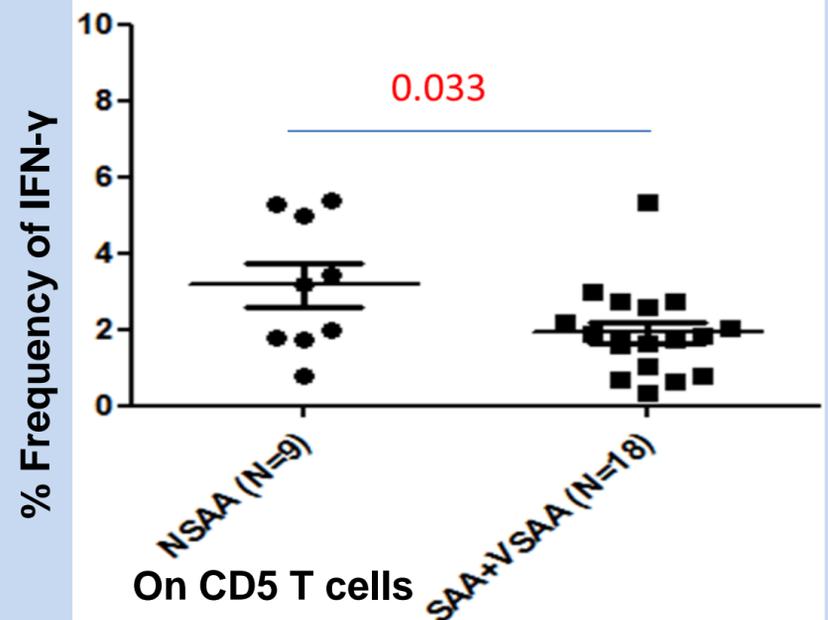
•The cells were cultured in the presence of plate bound anti CD3; anti CD28 for 24 hours and monensin was added in the last 6 hours of culture. The cells were stained with CD5, IFN- $\gamma$ ,perforin antibodies and acquired in flow cytometer.

## Results

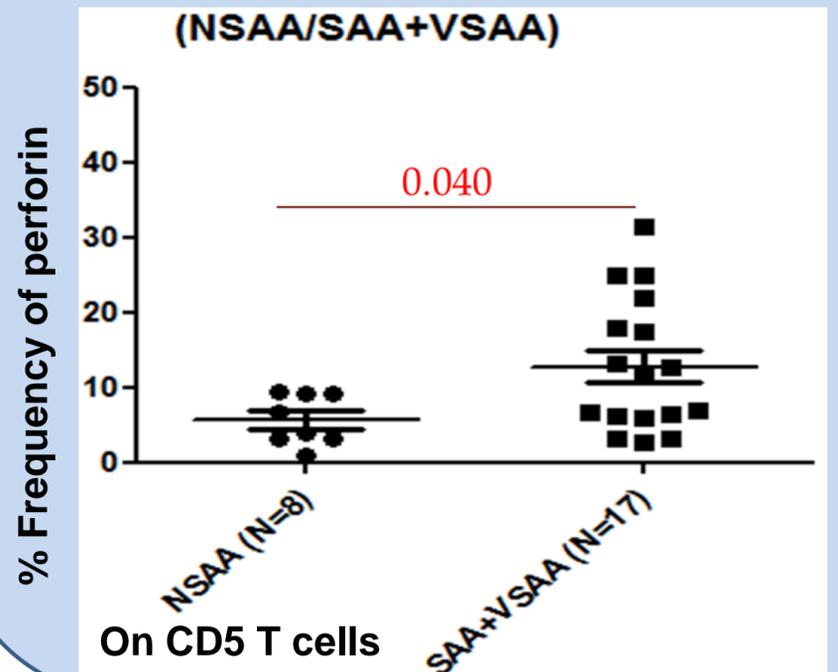
•Mean % of CD5 T cells expressing IFN- $\gamma$  was higher in NSAA than SAA+VSAA (P<0.05).

•Mean % of CD5 T cells expressing perforin was higher in SAA+VSAA than NSAA (p<0.05)

%Frequency of IFN - $\gamma$  on total T cells  
(NSAA/SAA+VSAA)



%Frequency of perforin on total T cells  
(NSAA/SAA+VSAA)



## Conclusion

•Lower IFN- $\gamma$  expression in SAA/VSAA as compared to NSAA could be due to the availability of more T cells in NSAA for analysis.

•Higher perforin expression by CD5 T cells could be an aberrant activation marker of immune system in response to an as yet unknown antigen.