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Expression of intracellular interferon gamma and perforin in T cells in acquired aplastic anemia patients

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A plastic anemia (AA) is characterized by peripheral blood pancytopenia with hypocellular bone marrow involving destruction of hematopoietic stem cells by T cells and their cytokine products. Interferon gamma (IFN- γ) and perforin are one of the mediators of cell destruction. In this study we investigated the expression of intracellular IFN- γ and perforin in T lymphocytes in peripheral blood of 30 acquired aplastic anemia patients by flow cytometry. None of the patients had been started on immune suppressive therapy. The patients were categorized as per disease severity: Non severe AA (NSAA), severe AA (SAA) and very severe AA (VSAA). The mean percentage of CD5 T cells expressing IFN- γ was higher in NSAA as compared to severe and very severe (SAA+VSAA) group (p=0.033) and SAA group (p=0.05). The mean percentage of CD5 T cells expression in SAA/VSAA cohort as compared to the NSAA group (P=0.040). Lower IFN- γ expression in SAA/VSAA cohort as compared to SAA/VSAA. IFN- γ stimulates the effector T cells for activity against the target cell which in case of aplastic anemia is the hematopoietic stem cell. High expression of perforin by CD5 T cells could be a marker of aberrant activation of immune system in response to an as yet unknown inciting agent.

Biography

Vandana Sharma is currently pursuing PhD under the supervision of Additional Professor Dr. Tulika Seth at the Department of Hematology of All India Institute of Medical Sciences, India.

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