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Short note on Immunotherapy

Mounica Merihelan*

Abstract: Immunotherapy is a medically performed therapy where the subject immune system is either boosted or suppressed based on the condition to treat cancer cells and auto immune disorders. In these two types of treatment are used Activation immunotherapy and Suppressive immunotherapy. Immunity Activating agents like Immune modulators have been used on the therapy to Amplify the patient immune response. Granulocyte colony stimulation factor (G-CSF) known for stimulating the bone marrow to produce granulocytes and stem cells is an example of these Immunity Activating agents. Modulators like Interleukins, Chemokines, Immunomodulatory imide drugs are used.

Keywords: Immunotherapies, Tumour, T- Cell, Antigens, GCSF cells

Immunotherapy or biological therapy is the treatment of disease by activating or suppressing the immune system. Immunotherapies designed to elicit or amplify an immune response are classified as activation immunotherapies, while immunotherapies that reduce or suppress are classified as suppression immunotherapies. In recent years, immunotherapy has become of great interest to researchers, clinicians and pharmaceutical companies, particularly in its promise to treat various forms of cancer

Activation immunotherapy is a therapy in which the subject Immunity is been amplified and boosted to maximum to fight the tumor cells and other diseases by activating cell mediated Immunity. These activation and destruction of cancer cells have been modified and done by various cells like by using G-CSF cells taken from subject are treated with the tumor antigen and released into the blood stream to present a cytokinesis. Later the lymphocytes attack the tumor cells that have been presented with this treated antigen. Dendritic cell-based pump- priming and T-cell adoptive transfer techniques are used to treat the tumor cells in cancer therapy.

In Dendritic Cell – based pump – priming the dendritic cells are extracted from the patient body and are treated with the tumor antigens. Basically, Dendritic cells are antigen presenting cells that activates a cytotoxic response which later attacks and destroys the tumor cells. Whereas, T- cell adoptive transfer technique uses the Analogues or patient own T cells and are Genetically engineered with the retroviruses genome in vitro and are presented with tumor antigens. These modified T cells are harvested and introduced into pateint body to destroy the tumor cells. It's an effective way to treat a last and advanced stages of skin cancer

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Suppressive immunotherapy is used to suppressor minimize one's immune system in conditions like Allergy, Chemotherapy, auto immune disorders etc Immunosuppressive drugs like Dexamethasone are used to suppress the immune response in chemotherapy stages.

Immune system has the ability to recognize one's own and foreign antigens. Due to some genetic disorders and other conditions the immune system is unable to process the antigens as own and attacks its own cells and tissues causing an Auto immune disorders. To suppress these actions immunosuppressive drugs and therapy are used. In grafting and organ transplantation or transfusion stages Suppressive drugs are used to neutralize the immune response. In cases like Allergies, the Immunity response is greatly inclined and responds over aggressively causing a life-threatening response. To neutralize these effects Anti histamines are used as a part of suppressing the Immunity for some period

***Corresponding author:** Mounica Merihelan, Department of Microbiology, Andhra University, India. E-mail: mounicamerihelan@gmail.com

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Author Affiliations Top

Department of Microbiology, Andhra University, India