

The influence of cannabinoids on reconstitution of hematological system after Bone Marrow transplantation (Hadasit)

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Osnat Hazan, Hadassah Ein Kerem, Bone Marrow Transplantation

Reuven Or, Hadassah Ein Kerem, Bone Marrow Transplantation

Investigators: Prof. Reuven Or and Dr. Osnat Hazan

Market Need

Lymphopenia, is the condition of having an abnormally low level of lymphocytes in the blood, can be a major problem in patients with solid tumors treated with radiation and chemotherapy, in patients recovering from hematopoietic stem cell transplantation (HSCT), and in other medical conditions. Lymphopenia makes patients susceptible to various infections and is associated with treatment-related lymphopenia and decreased survival in patients. Furthermore, patients who suffer from lymphopenia can be less responsive to immune checkpoint inhibitors. Altogether, there is a need for an effective mean to accelerate lymphocyte recovery in cancer patients receiving radiotherapy or chemotherapy to improve their survival rate.

Innovation

Cannabinoid receptor type 2 (CB2) antagonism using small molecules as a means to accelerate lymphopoiesis following chemotherapy and/or irradiation.

Findings

- ◆ CB2 knockout mice exhibit improved rehabilitation of lymphocytes following chemotherapy or irradiation.
- ◆ CB2 antagonist administration to mice elevated lymphocyte counts following irradiation and bone marrow transplantation compared to untreated mice.

Indications/Applications:

CB2 antagonists can be used a prophylactic and as a combination treatment with chemotherapy/irradiation, to enable a faster lymphocyte recovery to patient survival, as well as to increase the chance for a successful treatment by immune checkpoint inhibitors.

Competitive Advantage

A novel solution for a significant unmet need that currently has limited solutions and success rate.

Contact for more information:

Tal Almog , 054-3187538

Hadasit Medical Research Services & Development Ltd

Mother & Child Pavilion, Hadassah Ein Kerem, Jerusalem , 91120 Israel

Phone: +972-2-6778757, Fax: +972-2-6437712, E-mail: skimhi@hadassah.org.il