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The Electromagentic Fields' Effects And Antioxidants On NK Cells in Metastatic Cancer Patients With Solid Tumors

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Introduction: Natural killer cells (NK Cells-NKCs) play a significant role in the immune system
Purpose: The investigation of possible induction of functionality of NKCs by exposing metastatic cancer patients to electromagnetic fields (EMF) and administer antioxidants
Materials and Methods: Four metastatic cancer patients participated in this project whose life expectancy was about three months. The cytotoxicity of the NKCs and the absolute number of the NK cells and NKTs was determined by flow cytometer FACScan of BDB corporation without any therapy. Their NK cells were estimated after the 2 months after exposure of them in a device of EMF for 5 hours every day for about a month. Also they were administered of Vitamin C, E, beta catotene, and selenium.
Results: Woman 38 years old, before therapy showed NKCs 14.5%, NKTs 5%, cytotoxicity 26, 48, 89% in ratios 12.5:1, 25:1, 50:1. After therapy NKCs 21%, NKTs 6%, cytotoxicity 32, 28, 72 %. Woman 52, before NKCs 6%, NKTs 5.5%, cytotoxicty 3, 89, 84%. After NK 8%, NKT 19%, cytotoxicity 43.5, 59, 72%. Man 36 before before NKCs 6%, NKTs 3%, cytotoxicty 24, 49, 90% in the three ratios. After NK 7%, NKT 14.5%, cytotoxicity 32, 39, 79%. Woman 28, before NKCs 6%, NKTs 1,7%, cytotoxicty 16, 43, 38%. After NK 17.5%, NKT 16%, cytotoxicity 41, 46, 71%.
Conclusion: The EMF exposure of the patients stimulated the bone marrow and proliferated the number of the NKCs, while the antioxidants stabilized their cytotoxicity level.

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Anticancer And Antiplatelet Properties Of Ascorbic Acid

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Introduction: Ascorbic acid seems to have exceptional scientific interest on thromboembolic diseases and cancer. NK cells is important subpopulation of lymphocytes that kill viruses, bacteria, and cancer cells.
Purpose: The investigation of possible induction of functionality of NK cells and inhibition of the expression of the platelet receptor GpIIb-IIIa by the use of ascorbic acid.
Materials and Methods: i) In 28 healthy volunteers, the cytotoxicity of NK cells was detected with the methods of cytotoxicity assay and flow cytometry by the use of ascorbic acid, in $3X10^{-3}$M concentration, ii) In the isolated platelet rich plasma (PRP) of 28 healthy volunteers, trials of antiplatelet action were performed by the use of ascorbic acid. Then, the use of monoclonal antibodies (Mabs) and the methodology of flow cytometry detected the receptors GpIIb-IIIa per platelet.
Results: i) The increase of cytotoxicity observed was 110%, 67%, and 282% in average in the ratios 12.5:1, 25:1, and 50:1 respectively, ii) The expression of the receptor GpIIb-IIIa was decreased about 98% compared with the healthy volunteers, while a reorganization on the three dimensional structure of the receptor GpIIb-IIIa was observed after the use of ascorbic acid.
Conclusion: The NK cytotoxicity assay can significantly help in immunodiagnosis and immunomodulation, while the marker of GpIIb-IIIa is important marker for platelet accumulation. In addition, ascorbic acid can be useful in therapy and prevention of cancer and thromboembolic diseases.

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The immunomodulatory effects of NK cells by administration of Vitamin C and Aloe Vera in vivo

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Introduction: vitamin C and the extract of aloe vera are mentioned to have many properties for people's health. Natural killer cells (NK Cells-NKCs) play an important role in the immune system.

Purpose: The investigation of possible induction of functionality of NKCs by administration of vitamin C and aloe vera in healthy individuals.

Materials and Methods: Ten healthy (7 men 3 women) volunteers (range of ages 34 to 70) participated in this project and administered to them 1 gr. of pure vitamin C and 50 ml of the extract of aloe vera for 45 days. The cytotoxicity of the NKCs and the absolute number of the NK cells was determined by flow cytometer FACScan of BDB corporation. Their NK cells were estimated before and after the 45 days of the supplements.

Results: The increase of cytotoxicity observed in six out of the ten volunteers. The absolute number of the NKCs didn't change at all. The increase in NK cytotoxicity in the ratios 12.5:1, 25:1, and 50:1 was in the 59 year old female 431%, 75%, 161%, the 36 female 0%, 49%, 25%, the 70 male 87%, 154%, 196%, the 42 male 5%, 85%, 50, the 38 male 505%, 272%, 125%, and the 58 male 0%, 119, 107%.

Conclusion: The above supplements seem to have significant stimulatory effects on human NKCs against cancer cells and could be used for health prevention. However, it is important to be noted that they don't stimulate the bone marrow to produce new NK cells.