



Antineoplastic effects of nutrient mixture on raji and jurkat T cells: the two highly aggressive Non-Hodgkin's Lymphoma cell lines

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Non Hodgkin's Lymphoma (NHL) is the tenth most common cancer diagnosed worldwide. This diagnosis has consistently increased more than 70% in the past 30 years. NHL mainly affects the adult population. However, 7% of the deaths in children and young adults under 20 are attributed to NHL. While it is treatable, lymphoma has a high recurrence rate. Moreover, for children and young adults the dangerous side effects of the conventional chemotherapy and radiation treatments can cause secondary cancers, heart problems and other issues later in their life.

We studied the effects of a specific mixture of micronutrients on two of the most aggressive and fast growing subtypes of NHL-- Raji cells (representing Burkitt's lymphoma), and Jurkat cells (representing T-cell lymphoma). Our results showed that by gradually increasing the doses, the micronutrient mixture was able to completely block the cancer cell growth and cell invasion, and inhibit secretion of the MMP enzymes (100%). Reduction in the MMP enzymes reduces the potential of cancer cells to metastasize. The micronutrient combination was also effective in inducing selective death of cancer cells (apoptosis) up to 100% without harming the normal cells. Therefore, the micronutrients are proven safe and effective in improving the treatment outcome of lymphoma.