RADIATION AND RADIOTHERAPY

Augmented immunological activity as seen in increased NK (natural killer) and LAK (lymphokine-activated killer) activity by beta-glucan seems to play a role in preventing secondary infections associated with irradiation and probably contributes to the attenuated [reduced] tumor growth in tumor-bearing mice through enhanced anti-tumour immunity. These results suggest that beta-glucan may be a promising adjunct treatment for cancer patients receiving radiotherapy.


"Beta-glucans are naturally occurring polysaccharides....These substances increase host immune defense by activating complement system, enhancing macrophages and natural killer cell function. beta-Glucans also show anticarcinogenic activity. They can prevent oncogenesis [normal cell transformation to cancer cells] due to the protective effect against potent genotoxic carcinogens [chemical capable of causing cancer]. As immunostimulating agent, which acts through the activation of macrophages and NK cell cytotoxicity, beta-glucan can inhibit tumor growth...reduce tumor proliferation, prevent tumor metastasis. beta-Glucan as adjuvant to cancer chemotherapy and radiotherapy demonstrated the positive role in the restoration of hematopiesis [red blood cells] following by bone marrow injury. Immunotherapy using monoclonal antibodies is a novel strategy of cancer treatment. These [monoclonal] antibodies activate complement system and opsonize tumor cells with iC3b fragment. ...tumor cells, as well as other host cells, lack beta-glucan as a surface component and cannot trigger complement receptor 3-dependent cellular cytotoxicity and initiate tumor-killing activity. This mechanism [tumor-killing activity] could be induced in the presence of beta-glucans