

P94. THE EVALUATION OF CYTOTOXIC EFFECTS OF SUPPLEMENTARY GLUTAMINE CONSUMPTION IN HYPERICIN-MEDIATED PHOTO DYNAMIC THERAPY IN COLON CANCER CELLS

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Glutamine is a crucial amino acid in gluconeogenesis, protein and nucleic acid synthesis and also in cancer metabolism. Glutamine can be produced in sufficient quantities under stable conditions, but under metabolic stresses becomes a limiting amino acid and make the organism vulnerable to infections. A number of studies showed that exogenous glutamine can support the gut glutamine metabolism after chemotherapy, radiation, injury and other catabolic states. But the reports about usage of glutamine supplements while photodynamic therapy in colon cancer are rare.

In this study, Caco-2 colon adenocarcinoma cells were incubated with 0.1 μ M and 0.25 μ M hypericin containing DMEM, after 24 h medium was changed with glutamine-free (Group I), 4 mM glutamine (Group II) and 20 mM glutamine (Group III) containing low-dose glucose DMEM. Then the cells were irradiated with 4 J/cm². 24 h after hypericin activation cell cytotoxicity were measured by MTT assay.

According to the results, cytotoxicity increased depending on the hypericin concentration when compared to control group. On the other hand, the cytotoxic effects of hypericin decreased depending on the glutamine concentration. In 4 mM and 20 mM glutamine groups, cell viability started to increase again reflecting the decrease in efficiency of phytotherapy.

In literature, the effect of glutamine supplementation and oncology are conflicting, *in vitro* studies reveal an increase in cellular growth with glutamine supplementation which is supporting our results. The usefulness of glutamine uptake may change according to the tumor size, cell type, treatment method and patient.