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Radiotherapy and complementary individualized treatment for cervical cancer

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Cervical cancer is one of the most prevalent malignancy and of higher mortality in the world, and is considered a marker of underdevelopment. Conventional radiotherapy is one of the treatments used for this type of cancer. 30 to 40% of patients with similar prognosis factors not respond equally to a comparable standard treatment. The poor response to radiotherapy leads to the development of innovative and effective therapies for cervical cancer locally advanced, metastatic and refractory. A comparative analysis of cervical cancer in the context of other cancers may reveal that it is relatively smaller number of targeted molecular agents that have been tested. Accordingly, a number of biological agents are currently in clinical development for the purpose of, inhibiting angiogenesis, molecularly address EGFR and IGF-1R, modulation of cell cycle, of histone deacetylases, COX-2, mTOR and tumor microenvironment (hypoxia and glycolysis). Inhibitors of IGF-1R enthusiastically arrived at the clinic on the basis of preclinical targeting activity of IGF-1R, and the recognition that low IGF bioactivity system protects against cancer. Within work that we have been developing in cervical cancer with relationship to treatment, we reported that gene expression of IGF1R is a strong predictive marker for lack of response to radiotherapy, patients with expression of IGF1R have 28.6 times higher risk of failure treatment; the expression of IGF-IRβ detected by immunohistochemistry is a prognostic marker that affects overall survival and disease-free survival; the detection and study before treatment of the expression of CAIX, GLUT 1 and HKII, considered as biological factors pre-existing, contributes to infer the metabolic and hypoxic state, as also at the rational use of new modalities in radiotherapy and gene therapy in the regulation of hypoxia.

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Starvation Therapy for Cancer: Current Knowledge, Guidelines and Research Prospects

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Cancer is a serious disease that has used exhaustive efforts, and exerted heavy financial and scientific burdens to develop an understanding into the nature of its' various types, and to advance therapies and management protocols. It is becoming acceptable that among the major methods that appeared in the literature has been the use of starvation to reduce or even halt the survival of cancer cells at the time when normal cells would be less dramatically affected. Hence this review represents a comprehensive display of the effects of starvation on cells, the effecter mechanisms of starvation on various cells, and the definite experimental and clinical information available on this topic. These experiences are aimed at understanding and developing suitable and effective methods based on nutritional manipulations, for combating malignancies. Starvation modules generally include energy or glucose deprivation under normal or abnormal oxygenation, amino acid and nucleic acid deprivation, and other selected nutritional precursors. There are also experiments to study the effects of combined deficiencies. In addition, these artificial nutritional deficiencies have been tested for their potential uses in boosting the effects of chemotherapeutic agents. Nevertheless, negative effects of certain nutritional starvation modes have also been described extensively along with much of their underlying cellular mechanisms. Knowledge of these may give leads as to what methods to avoid among the available choices. They also serve as guidelines for research into developing methods for antagonizing or neutralizing such unanticipated negative effects.

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