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Abstracts

Radiotherapy

THE DELAY TIME IN RADIOTHERAPY

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In radiotherapy center, the waiting time represents one of the most greater problems. The principal cause of this phenomenon is represented by a smaller offer in comparison to the demand. In fact, in these last years the application of radiotherapy is increased both for the most greater incidence of new cases of cancer and for a greater extension in the radiotherapy indications. The delay in the beginning of the radiant treatment has on the patient negative effects is direct (what the tumoral growth, the worsening of the symptoms, the psychological effects) both indirect effects like trips of the hope and pressure on the radiation oncologist, that can jeopardize the quality of the same radiant treatment. Numerous evidences have shown that the delay in to begin can influence the obtainable results with the radiotherapy, allowing the proliferation of clonogenic cells inside the target and consequently a diminution of the local control. Besides the delay in the beginning of the radiotherapy can influence negatively the process of onset of the metastasis. None of the numerous present evidences in literature on the influence of the delay of the radiotherapy and that they suggest the role of the delay of the radiotherapy in the increase of the risk of local relapse, it reaches the level of 'evidence-based medicine'. In fact anybody study show a clear relationship among cause and effect, besides none of these studies has been drawn to the purpose to verify if this relationship exists. It is reasonable however to think that, through the improvements reached in the knowledge of the tumoral progression in the patients waiting for radiotherapy, especially as it regards the patients affections from the head and the neck cancer, the delay of the I begin some radiotherapy is responsible of many local failures. Although the effects of the delay of the radiotherapy is not the same for all the tumors, the negative effects tied up to it, can frustrate the benefits effects reached by the technological advancements of the radiotherapy.

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OPTIMIZATION OF THE THERAPEUTIC INDEX THROUGH THE INTEGRATION AMONG TARGET THERAPY AND RADIOTHERAPY

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Until now, the majority of the cancer therapy have not been specific: not based on the tumour biology and associated to a meaningful toxicity. The classical radiobiology has furnished valid elements on the cellular kinetics, has furnished valid elements on the cellular kinetics, on the processes of reparation and damage of the DNA and on the biological basis of administration of the dose, putting the bases for the new radiobiology, regarding the interactions of radiation ionizing and molecular-targeted agents. In the last years the therapeutic approach to the tumour is changed: the target of the cancer therapies is not more directly the neoplastic cells but is directed against targets necessary for tumour cell growth and viability with little toxicity to normal cells compared to conventional cytotoxic agents (Fig. 1).

Moreover, the modern radiobiology it is turned toward the molecular biology, not more the DNA as target but not DNA targets: specific growth factor or signal transduction inhibitors, as CDK, PKC, EGFR, VEGF, FT, MAPK. The non-DNA targets they result effective in to determine the cellular death or to make the most sensitive cells to the radiations. In 2006, Bunn¹ reported that 'Targeted therapy and radiation may work together in two

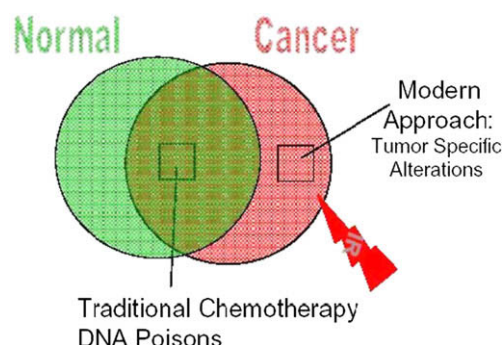


Fig. 1. The combination of targeted therapy and radiotherapy to treat cancer (Giaccia A. ASTRO 2007).