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Cardiovascular toxicity by anticancer therapy (chemotherapy, radiotherapy, targeted agents): Utility of early diagnosis and extended cardiological follow up

Fabio Maramao

Regina Elena National Cancer Institute, Italy

Anticancer treatment with chemotherapy, radiotherapy and targeted agents can lead to heart damages. Cardiotoxicity has a serious clinical and prognostic impact on cancer patients, and early identification is essential in order to start preventative therapy and cardiac support. The conventional tools currently being used for the diagnosis of cardiotoxicity (ECG and conventional echocardiographic study) do not permit early diagnosis of cardiotoxicity. The early diagnosis of cardiotoxicity induced by anticancer therapies is possible with a new approach based on the use of cardiac biomarkers, in particular troponins and with advanced echocardiography. In cancer patients, we can observe radiotherapy and chemotherapy heart damages even after many years. Cancer patient is a chronic patient and frequently requires prolonged, repeated anticancer therapies and repeated interventions of oncologic surgery during the course of his disease. The perioperative cardiological management it can determine changes that can take time, the consequent delay of the planned surgery to allow the assessment and significant changes in cardiological management, will negatively affect outcome also with a negative impact on the costs for the time extension of the hospitalization. In cancer patients, we recommend the cardiological surveillance, also for several years, after radiotherapy and chemotherapy to detect and treat in time heart damages to avoid delays in case of future oncologic time-sensitive surgery.

maramao@ifo.it

Let-7 family miRNAs: Potential broad-spectrum therapeutic molecules for human cancer

Jian Guan

PUMC Hospital, China

Let-7 was first discovered in *Caenorhabditis elegans* and is one of the most extensively studied miRNAs. The human let-7 family contains 13 miRNAs. The expression of these miRNAs is decreased in most human cancers and contributes to carcinogenesis and progression. Exogenous let-7 restoration has been confirmed to show antitumor efficacy in many human cancers. Let-7 functions as a tumor suppressor by acting upon several multi-signaling pathways and multiple downstream target oncogenes that are involved in most human cancers. Let-7 shows potential for modulation of chemoresistance and radiation sensitivity in human cancers. Here, we review the latest research on let-7 including our studies in some cancers and discuss its potential value as a broad-spectrum antitumor molecule.

gjpmch@126.com