

# What is cardio-oncology?

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## DESCRIPTION

**C**ardiology is branch of medicine which deals with diseases and abnormalities of the heart. Cardio-oncology is not the science or nor the practice of treating heart tumors. Cardio-oncology is an emerging multidisciplinary field that focuses on the cardiovascular management which includes prevention, diagnosis and treatment to the patients with cancer. Its core objective of discipline is to ensure that "the cancer patient of today does not become the heart patient of tomorrow." In the year 1929, Thibaudau first reported marked pathological changes in the myocardium of 10 patients who underwent wide-field thoracic radiation. Where abnormalities ranged from mild interstitial fibrosis to muscle fiber degeneration and necrosis from which investigators have shown that the culprit mechanisms underlying radiation-induced cardiac disease were endothelial cell damage, microvascular dysfunction and macrovascular injury.

It is field that takes a team-based approach with including of cardiologists, oncologists, and hematologists working together for the prevention, early detection and management of cardiovascular disease in cancer patients throughout all stages of cancer therapy and in the survivorship period. This field of cardio-oncology is rapidly growing due to the recognition that many agents that are effective cancer therapies leave survivors at heightened risk for cardiovascular disease. Cancer treatment which includes chemotherapy and radiation therapy can put patients at risk for developing a variety of cardiovascular complications including heart failure, thromboembolism, coronary artery disease, peripheral vascular disease, valvular heart disease and pericardial disease. Cancer patients receiving therapy with known cardiac risk should be monitored closely during and after treatment. Echocardiography is one the diagnostic test that plays an essential role in the early detection of many of these cardiac complications. More than fifty years

ago the first example of cardiac-oncology therapy toxicity was described in relation to anthracyclines. The concept that ChemoTherapy (CT) and RadioTherapy (RT) may induce potentially deadly CardioVascular (CV) side effects developed progressively and cardiologists were charged with the management of patients with these complications. In a few short years, C-O has shown huge growth and development. The reasons include, consequent increase of the prevalence of patients suffering from both conditions, increasing survival from cancer and CVD with an increase in the prevalence of these two conditions combined, more than from cancer recurrence most of the survivors from cancer therapy develop or die from CVD, due to the enhanced toxic effects of CT and RT patients suffering from cancer may have CVD risk factors and a pre-existing CVD. The best treatment may be achieved if cardiologists and oncologists are interacting properly, building a C-O expert team.

As it is known from different studies that, the probability of every patient who is facing cancer the occurrence of CVD complications is high. Every cancer patient should be aware of the toxicity of a CT agent or of RT, the risk factors and pre-existing CVD leading to cardiotoxicity, and the use of preventive and curative measures during possible cardiotoxic therapy.

## CONCLUSION

Cardiologists and oncologist should undertake the therapeutic option for a cancer patient by planning the optimal therapy regimens to minimize or reduce cardiotoxicity without compromising anticancer treatment efficacy and also detecting CV effects when potential cardiotoxic agents are used.

Preventing CV side effects with a careful CV work-up before using therapies with significant cardiotoxicity, paying attention to the patient's comorbidities that should be controlled.

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