

## Cancer and Cardiovascular Disease. A New Entity

Syed Wamique Yusuf\* and Smita Negi

Division of Cardiology, University of Texas M.D. Anderson Cancer Center, USA

Cancer and cardiovascular disease (CVD) are the two most common cause of mortality [1]. With an increase in the aging population worldwide, it is not uncommon for these two conditions to coexist. Amongst older patients diagnosed with cancer, heart and vascular disease is the most frequent concomitant condition [2]. About 20% of patients older than 70 years of age with newly diagnosed cancer have coexisting CVD [2]. Patients with a recent diagnosis of cancer also have an increased risk of death from cardiovascular causes [3]. Among patients undergoing coronary revascularization, greater than 50% of the deaths are due to non cardiac causes, of which 20% are related to neoplasia [4].

CVD sometimes precedes the diagnosis of cancer and can also occur as a complication of cancer therapy. Cancer and its treatment can also accelerate or worsen pre-existing cardiac disease. Both chemotherapy and radiation causes long term cardiovascular side effects. Chemotherapy agents can cause a wide range of cardiotoxicity, ranging from vascular events to heart failure and cardiomyopathy [5].

Some of the common agents predisposing to chemotherapy induced cardiomyopathy include anthracyclines and trastuzumab [6]. Certain other newer agents such as tyrosine kinase inhibitors and some newer investigational agents have also been recognized to cause cardiac side effects [6]. Radiation causes long term side effects which can affect the pericardium, valves, conduction system and myocardium [7]. Management of underlying cardiac disease may pose complex problem in patients with cancer. Due to concern about bleeding, presence of thrombocytopenia, poses particular problem in the management of patients with coronary stents or prosthetic valve.

Due to exclusion of cancer patients from large cardiovascular clinical trials, there is limited data available on the treatment of cardiac disease in cancer population. Physicians involved in the care of patients

with cancer should have a low threshold for screening and treating patients with cardiac side effects of cancer and its treatment.

The key is early detection of these side effects, as treatment in these cases may halt the disease process or in some cases even reverse it. In patients with chemotherapy induced cardiomyopathy, treatment with standard cardiac medications like beta blockers and angiotensin converting enzyme inhibitors, will improve left ventricular ejection fraction, in particular if cardiomyopathy is detected early and therapy started promptly [8].

### References

1. Fuster V, Voûte J (2005) MDGs: chronic disease are not on the agenda. *Lancet* 366: 1512-1514.
2. Coebergh JW, Janssen-Heijnen ML, Post PN, Razenberg PP (1999) Serious co morbidity among unselected cancer patients newly diagnosed in the southeastern part of the Netherlands in 1993-1996. *J Clin Epidemiol* 52:1131-1136.
3. Fang F, Fall K, Mittleman MA, Sparén P, Ye W, et al. (2012) Suicide and Cardiovascular death after a cancer diagnosis. *N Engl J Med* 366: 1310-1318.
4. Viera RD, Pereira AC, Lima EG (2012) Cancer related death among different treatment options in chronic coronary artery disease: result of a 6 year follow up of the MASS II study. *Coron Artery Dis* 23: 79-84.
5. Yusuf SW, Razeghi P, Yeh ET (2008) The diagnosis and management of cardiovascular disease in cancer patients. *Curr Probl Cardiol* 33: 163-196.
6. Yusuf SW, Ilias-Khan NA, Durand JB (2011) Chemotherapy induced cardiomyopathy. *Expert Rev Cardiovasc Ther* 9: 231-243.
7. Yusuf SW, Sami S, Daher I (2011) Radiation induced heart disease: A Clinical Update. *Cardiol Res Prac* 2011: 1-9.
8. Cardinale D, Colombo A, Lamantia G, Colombo N, Civelli M, et al. (2010) Anthracycline-induced cardiomyopathy. Clinical relevance and response to pharmacologic therapy. *J Am Coll Cardiol* 55: 213-220.

\*Corresponding author: Syed Wamique Yusuf, MD, Division of Cardiology, University of Texas M.D. Anderson Cancer Center, Houston, TX.77030, USA, Tel: 713-7928472; E-mail: [syusuf@mdanderson.org](mailto:syusuf@mdanderson.org)

Received November 30, 2012; Accepted December 01, 2012; Published December 03, 2012

Citation: Yusuf SW, Negi S (2013) Cancer and Cardiovascular Disease. A New Entity. *J Clin Exp Cardiol* 4:e118. doi:10.4172/2155-9880.1000e118

Copyright: © 2013 Yusuf SW, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.