Myocardial scintigtraphy, echocardiography and proBNP for early detection of myocardial cardiotoxicity in breast cancer patients after chemo-radiotherapy

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Keywords: Treatment-induced cardiotoxicity
- FGSPET myocardial scintigraphy - ProBNP - Echocardiography

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Received: 9 May 2011, *Accepted revised*: 29 July 2011

Abstract

The most severe side effect in breast cancer patients, treated with chemotherapy and/or radiotherapy is cardiotoxicity, leading to chronic heart failure and worsening the quality of life. *The aim* of our study was to detect early in these patients signs of cardiotoxicity. *Twenty four breast cancer patients* were included in our study after combined treatment (chemo and radiotherapy). We studied myocardial function by gated single photon emission tomography (GSPET-MS), echocardiography (EC) and 32 amino acid polypeptide B-type natriuretic peptide (ProBNP) measurements. *We found* early signs of cardiotoxicity in 10/24 investigated patients. All patients had no clinical symptoms, and normal electrocardiogram and left ventricular injection fraction (LVEF). According to results from the performed tests, patients were divided in 4 groups: a) Normal systolic and diastolic LV function, normal ProBNP value, normal myocardial scintigraphy in 14/24 patients. b) Diastolic dysfunction, increased ProBNP value, hypoperfused defects in myocardial scintigraphy in 5/24 patients. c) Diastolic dysfunction, normal ProBNP value, hypoperfused defects in myocardial scintigraphy in 3/24 patients. d) Normal systolic and diastolic LV function, normal ProBNP value, hypoperfused defects in myocardial scintigraphy in 2/24 patients. *In conclusion*, in patients with breast cancer and asymptomatic cardiotoxicity by applying GSPET-MS, ProBNP measurements and EC diastolic function tests, we detected early signs of myocardial damage in 10/24 patients 6-12 months after chemotherapy and radiotherapy.

Hell J Nucl Med 2011; 14(3): 269-273 *Abstracted on line: 10 November 2011*