



Cardiotossicità e scompenso

I biomarkers come indici precoci di cardiotossicità

Daniela Cardinale

Direttore – Unità di Cardioncologia

Istituto Europeo di Oncologia - Milano

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In cancer patients cardiac biomarkers can be of help in:

EARLY DIAGNOSIS OF CARDIOTOXICITY

PREVENTION IN SELECTED HIGH RISK PATIENTS

GUIDING HF TREATMENT AND RECOVERY

L.F., 40-year-old woman

- left sided breast cancer
- staging: pT2 pN3a (24/30) - grading MG2
- receptors: ER 80%, PR 90%, HER2 negative.

- No history of CV disease
- No CV risk factors
- Baseline ECHO: normal - LVEF 66%

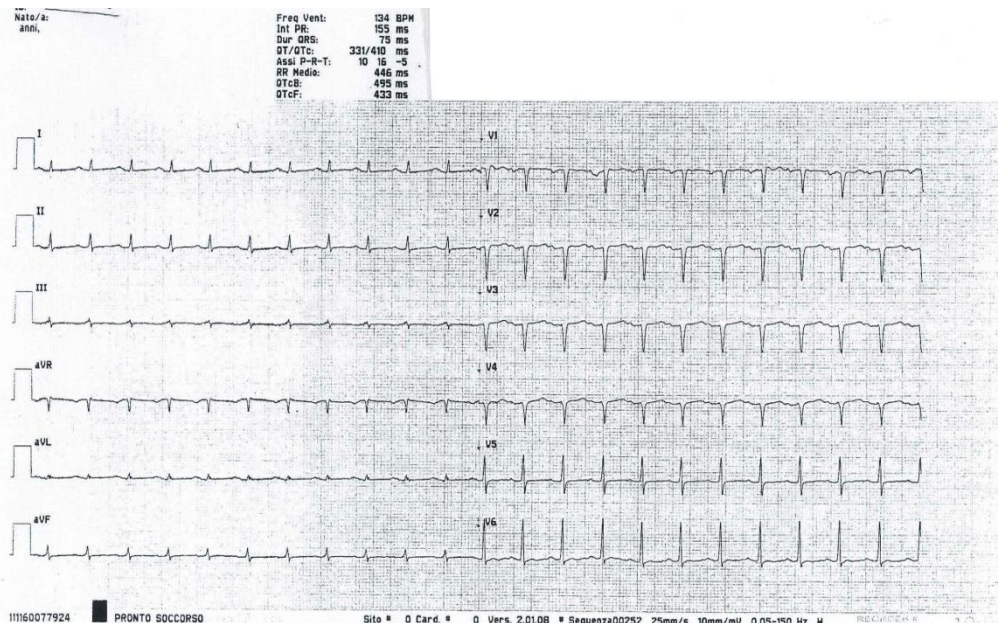
Cancer therapy

- 18/5/2013:
left mastectomy + axillary dissection
- 6/7/2013 – 22/9/2013:
Epirubicin 90 mg/m² --> 140 mg tot
Cyclophosphamide 600 mg/m² --> 960 mg tot
- From 16/6/2013 to present:
Decapeptyl 3.75 mg i.m. every 28 days
- From 5/10/2013 to present:
Tamoxifen 20 mg/day
- 25/10/2013 – 15/11/2013:
left side chest and supraclavicular lymph nodes radiotherapy (RT)
with image-guided technique; total dose 40 Gy

} X 4 cycles


Follow-up 1

- She was considered at low risk for cardiotoxicity. She was not scheduled by oncologists for any cardiologic ± ECHO check during and after chemotherapy (CT) and RT.
- 31 March 2014 (6 months after the end of CT): hospitalization for congestive heart failure. Evidence of hypokinetic cardiomyopathy with severe left ventricular dysfunction (LVEF = 16%) and bilateral pleural effusion.



Follow-up 2

- Start of heart failure therapy:

Enalapril	2.5 mg	
Bisoprolol	2.5 mg	
Furosemide	120 mg ev	 100 mg orally
Spironolactone	25 mg.	
- Discharge on April 10nd, 2014: NYHA II
BP 100/70 mmHg
HR 90 b/m
LVEF 20%
No evidence of residual pleural effusions

Cardiological Re-evaluations

April, 15th, 2014

NYHA II

BP 100/70, HR 98 b/m

LVEF 23%

Troponin I = 0.006 ng/ml

NT-proBNP = 4822 pg/ml



bisoprolol = 3.75 mg die

June 5th, 2014

NYHA II

BP 100/60, HR 85 b/m

LVEF = 30%

Troponin = 0.002 ng/m

NT-proBNP = 3660 pg/ml

August, 9th, 2014

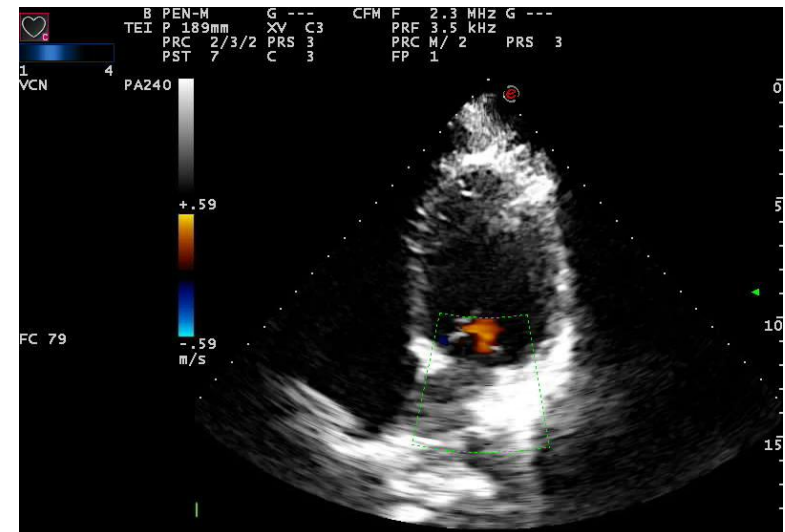
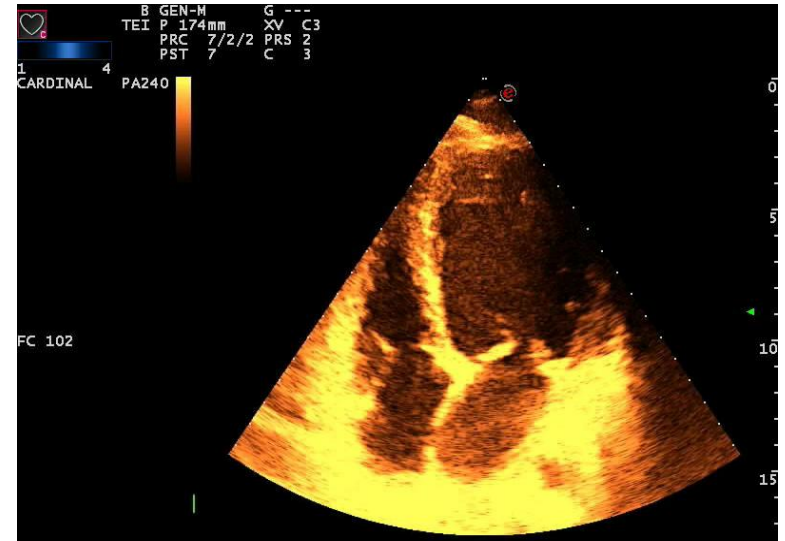
NYHA I

BP 100/70, HR 80 b/m

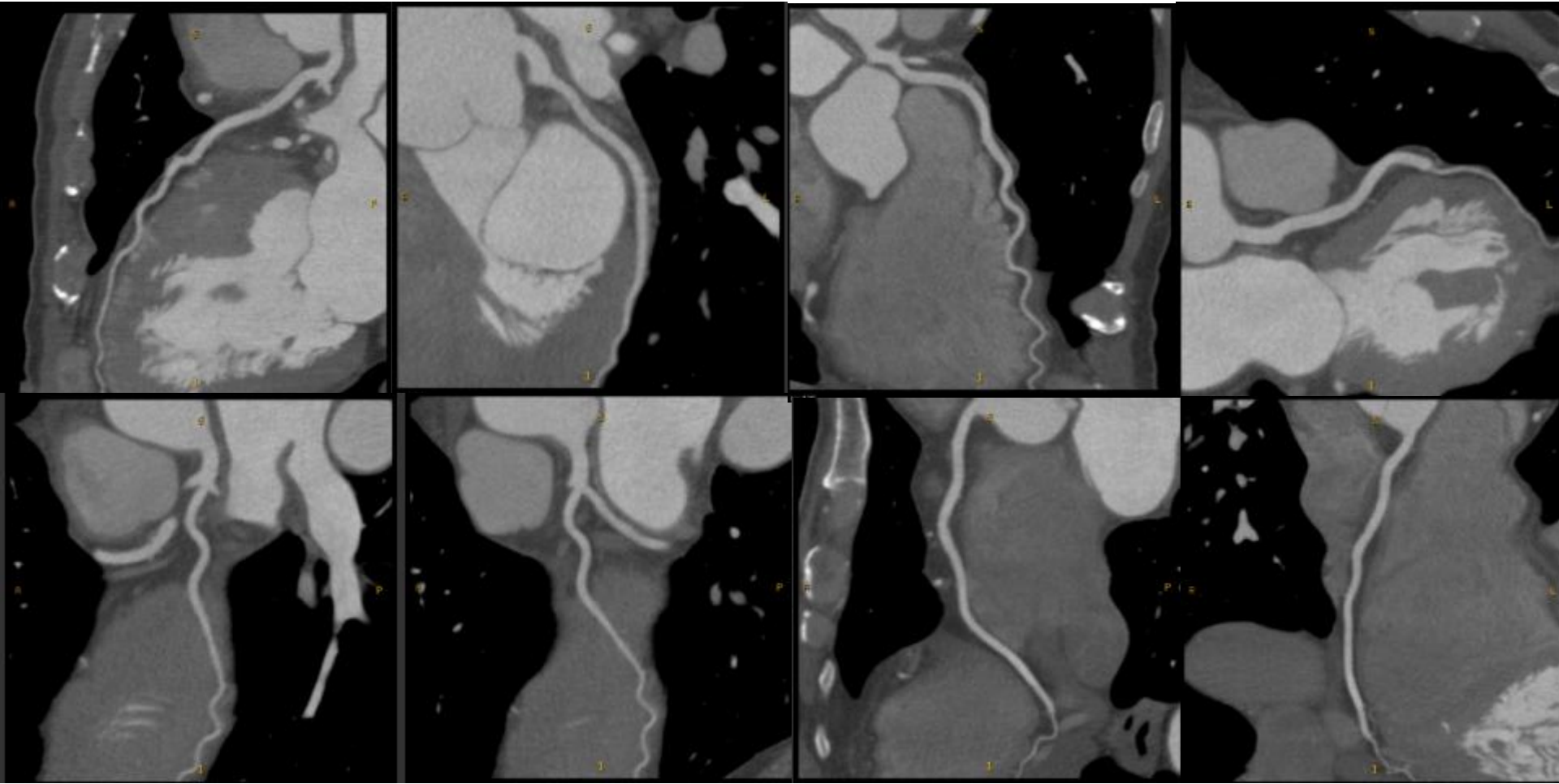
LVEF 32%

Troponin = 0,004

NT-proBNP = 2393



Cardiac Computed Tomography Angiography



August, 12th 2014

NT-proBNP - LVEF – HF THERAPY

	NT-proBNP pg/ml	LVEF %	bisoprolol	enalapril	furosemide	spironolactone		
31/03/2014	6789	16	2,5 mg	5 mg	100 mg	25 mg		
15/04/2014	4822	23	3,75 mg	5 mg	100 mg	25 mg		
05/06/2014	3660	30	5 mg	5 mg	100 mg	25 mg		
09/08/2014	2393	32	7,5 mg	5 mg	75 mg	25 mg		
06/10/2014	1766	33						
05/12/2014	1200	36						
23/02/2015	945	36						
28/04/2016	870	38						
30/06/2015	572	38						
26/08/2015	814	35						
25/09/2015	890	36	↑ bisoprolol = ↓ BP				ivabradine 7,5 mg x 2	
13/10/2015	279	42						
10/11/2015	237	45	7,5 mg	5 mg	50 mg	25 mg	15 mg	
18/01/2016	229	45						
11/04/2016	200	47						
04/07/2016	205	49						
02/08/2016	201	52						
07/11/2016	180	54						
21/01/2017	90	56	bisoprolol	enalapril	furosemide	spironolactone	ivabradine	
			7,5 mg	5 mg	50 mg	25 mg	15 mg	