Heart Failure and Cardiomyopathies

PREDICTIVE VALUE OF HIGH-SENSITIVITY CARDIAC TROPONIN T, TROPONIN I, NT-PROBNP AND HIGH- SENSITIVITY CRP IN THE DETECTION OF MYOCARDIAL INJURY FOLLOWING ANTHRACYCLINE-BASED CHEMOTHERAPY

Poster Contributions
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Background: The cardiotoxic effects of anthracycline (ANT)-based chemotherapy are well documented. Biomarkers may be useful for detection of early cardiotoxicity before changes in left ventricular ejection fraction (LVEF) can be observed.

Hypothesis: To determine the predictive values of troponin I (Beckman), high-sensitivity troponin T (hsTnT), N-terminal prohormone B-type natriuretic peptide (NT-proBNP) and high-sensitivity C-reactive protein (hsCRP) in predicting cardiotoxicity in patients receiving ANT-based chemotherapy.

Methods: This was a prospective cohort study where consecutive patients underwent serial evaluation of cardiac function and biomarkers before and at 3, 6 and 12-months following ANT-based chemotherapy. Cardiotoxicity was defined as a reduction of ≥5% from baseline LVEF with symptoms of heart failure or an asymptomatic reduction in LVEF of ≥10%.

Results: There were 65 patients with a mean age of 64.5 years and 54% were females. Five patients (7.7%) developed asymptomatic cardiotoxicity. Six and 12-month troponin I had the best predictive values (Table 1). Six-month hsCRP was also predictive of cardiotoxicity, while the predictive value of 6-month NTproBNP was borderline.

Conclusion: In patients who received ANT-based chemotherapy, troponin I was predictive of early asymptomatic cardiotoxicity.

Table 1:

	Baseline C-statistic (95% CI); p-value	3-month C-statistic (95% CI); p-value	6-month C-statistic (95% CI); p-value	12-month C-statistic (95% CI); p-value
TnI	0.50 (0.20-0.80); p=1.00	0.76 (0.58-0.95); p=0.15	0.87 (0.71-1.00); p=0.04	0.88 (0.74-1.00); p=0.03
hsTnT	0.52 (0.19-0.86) p=0.90	0.68 (0.36-0.99); p=0.32	0.68 (0.35-1.00) p=0.30	0.62 (0.31-0.94); p=0.49
hsCRP	0.61 (0.25-0.96); p=0.55	0.61 (0.26-0.96); p=0.55	0.88 (0.76-1.00); p=0.03	0.64 (0.25-1.00); p=0.43
NT-proBNP	0.34 (0.00-0.70); p=0.38	0.55 (0.14-0.93); p=0.85	0.81 (0.51-1.00); p=0.09	0.33 (0.00-0.87); p=0.35