Echocardiographic cardiotoxicity screening for breast cancer patients treated with Trastuzumab in a tertiary hospital: the need for developing a comprehensive cardio-oncology programme

Priest, G., Ntoskas, T. and Hothi, S. S.
New Cross Hospital, Wolverhampton, England.

Introduction
The cardiotoxic properties of Trastuzumab is well documented. The American Society of Echocardiography and the European Society of Cardiovascular Imaging recommend echocardiography as the imaging method of choice for monitoring patients receiving Trastuzumab for HER2 positive breast cancer. Despite the wealth of evidence, our department currently does not have a dedicated cardio-oncology clinic or echo service. The concern here is echocardiography is not being used to its full potential, utilising 3D left ventricular ejection fraction, strain imaging and contrast enhanced echo where indicated, in line with current guidelines.

Aim
To address the challenges that arise through not having a dedicated service we retrospectively reviewed the echo data of 134 patients who have or had received treatment for breast cancer expressing the HER2 receptor. We would go on to evaluate our current practice and formulate a robust cardio-oncology service.

Results
In total, 961 echos had been performed for the 134 patients from January to December 2018 in our centre (New Cross Hospital, Wolverhampton, UK). All had received baseline echos and follow-up echos according to guidelines. We reviewed the number of scans each patient had received, baseline and latest LV dimensions and ejection fraction, whether the EF was quantitatively or qualitatively derived and the incidence of strain and 3D EF assessment. Also recorded was the use of echo contrast and the number of scans where there was an indication for the use of contrast, but contrast not applied without good reason. We revealed a large heterogeneity of operators, with an average of greater than 5 echocardiographers with varying levels of experience per patient. Across all studies, the uptake of 3D and strain assessments, and echo contrast where indicated, was low, despite the availability of equipment (3D=2.1%, strain= 5%, contrast= 1.5%). There were large variations in the use of quantitative and qualitative EF assessment across all studies, and for the same patients assessed serially.

Discussion
The large variations in delivery of echocardiography shown in our service evaluation have highlighted the need to develop a targeted service for this cohort of patients. The ASE and EACVI guidance both state that there is a need for dedicated sonographers to reduce intra-operative variability and quantification of LVEF by Simpsons’ Biplane, 3D LVEF assessment and strain. Contrast is indicated when two or more adjacent segments cannot be seen clearly. We urgently need to implement changes to our current practice to implement the guidance. We are currently in the process of building a cardio-oncology department currently does not have a dedicated cardio-oncology service. De...