Echocardiography has potential to evaluate cardiac toxicity

Echocardiography has a central role to play in identifying patients at risk of suffering heart damage from cancer therapies, and also in evaluating potential cardio-protective treatments, report two new studies at the EUROECHO and other Imaging Modalities 2011 Congress, Budapest, Hungary.

One study presented at the meeting outlined an initiative using echocardiography to document early warning signs of adverse effects from trastuzumab (Herceptin), while the other used echocardiography to evaluate the protective role of angiotensin-converting enzyme (ACE) inhibitors and statins on the hearts of cancer patients.

Echocardiography is widely used to evaluating cardiac toxicity, but the most commonly used parameter – left ventricular ejection fraction – does not identify the early subtle alterations in left ventricular function that predict future functional decline.

In the first study Dores and colleagues set out to identify early warning signs of adverse cardiac effects in women treated with trastuzumab for breast cancer. In the study 51 consecutive women, enrolled for treatment between May and September 2010, were assessed at baseline with echocardiography and then again at 3 months.

Within the first 3 months no patients presented with overt signs of heart failure or significant left ventricular systolic function deterioration, although almost one-fifth developed impaired ventricular relaxation.

In the second study Radulescu and colleagues used echo-Doppler echocardiography in a prospective study to investigate whether the ACE inhibitor lisinopril and the statin rosuvastatin might confer a cardio-protective effect on patients treated with anthracyclines for a range of malignancies.

Left ventricular ejection fractions and left ventricular diastolic function were compared for 26 patients treated with the anthracycline epirubicin who were also given lisinopril 10 mg and rosuvastatin 10 mg, and a control group of 31 gender and age-matched patients who received epirubicin but no cardioprotective treatments.

In comparison with patients receiving cardio-protection the patients who receive no protection showed further deterioration of left ventricular diastolic function, calculated as the ratio of early diastolic filling velocity (E) to filling velocity after atria contraction E/A (P<0.02).

'These studies open the way for the early identification of myocardial damage at the subclinical level, thereby allowing clinicians to identify patients who might benefit from either changes in cancer therapy or the delivery of protective treatments,' said Dr Luigi Badano, from the University of Padua, Italy, President of the European Association of Echocardiography.

President of the European Association of Echocardiography, Dr Luigi Badano, University of Padua, Italy

Dores H, Gandara F, Correia MJ et al (2011) Early Trastuzumab induced cardiotoxicity in breast cancer patients. EUROECHO and other Imaging Modalities Congress, Budapest, Hungary, 7–10 December: abstract P315

Radulescu L, Radulescu D, Andreea P et al (2011) Cardioprotective role of lisinopril and rosuvastatin in the prevention of anthracycline induced cardiotoxicity. EUROECHO and other Imaging Modalities Congress, Budapest, Hungary, 7–10 December: abstract P316

Switching drugs improves breast cancer patient survival rates

Until recently, most women diagnosed with early stage oestrogen receptor-positive (ER+ or hormone sensitive) breast cancer were given tamoxifen for around 5 years after surgery to help prevent disease recurrence. Over recent years, increasing numbers of women have been treated with aromatase inhibitors either as first-line treatment or after treatment with tamoxifen.

The Intergroup Exemestane Study was set up across 37 countries in 1998 to examine the long-term effectiveness of switching to exemestane after 2–3 years tamoxifen to complete a total of 5 years adjuvant treatment. Postmenopausal patients who were disease free after 2–3 years of adjuvant tamoxifen were randomly assigned to continue tamoxifen or switch to exemestane for the remainder of the 5-year period.

In 2007 it was shown that women who switched drugs had higher survival rates, but it was unclear whether this would continue after treatment finished and whether there would be any long-term side effects.

The analysis (Bliss et al, 2011) included 4052 patients with ER+ cancer and 547 women with tumours whose ER status is unknown. After a median follow up of 91 months, women who had been switched to exemestane were 18% less likely to have disease recurrence and were 14% less likely to have died than those who stayed on tamoxifen.

Women who took exemestane had fewer gynaecological side effects and more musculoskeletal side effects while on treatment, but there was no significant difference in long-term side effects between the groups.

Lead author Professor Judith Bliss, Director of the Institute of Cancer Research's Clinical Trials and Statistics Unit, said: 'The long-term results from our study show that the improvements observed following the switch to exemestane are real and continue for at least 5 years after finishing treatment. These modest but persistent improvements in overall survival will be welcome news for the many postmenopausal women diagnosed with ER+ breast cancer.'

Bliss JM, Kilburn LS, Coleman RE et al (2011) Disease-related outcomes with long-term follow-up: an updated analysis of the Intergroup Exemestane Study. *J Clin Oncol* Nov 21 [Epub ahead of print]