Abstract: P857

Early a small decline in left ventricular ejection fraction can predict trastuzumab-related cardiotoxicity in patients with breast cancer: A study using 13 years of registry data

Authors:
E K Kim¹, JH Cho², YH Park¹, JY Kim¹, ¹Samsung Medical Center, Sungkyunkwan University - Seoul - Korea Republic of, ²Inha University School of Medicine, Medicine - Inchon - Korea Republic of,

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Background: While concerns regarding trastuzumab-related cardiac dysfunction (TRCD) in patients with breast cancer are increasing, there is a lack of evidence supporting the current recommendations for TRCD monitoring.

Purpose: we aimed to investigate the clinical manifestations and predictors of TRCD in the adjuvant setting of HER2-positive breast cancer in Asian patients.

Methods: A total of 1,371 consecutive patients who were treated with trastuzumab for breast cancer were enrolled. TRCD was defined as a decrease =10% in left ventricular ejection fraction (LVEF), with a decline below the normal limit or symptomatic heart failure.

Results Among 787 patients (mean age, 50.0±9.5 years), 58 (7.4%) developed TRCD. TRCD patients had lower baseline LVEF (63 [59–66]% vs. 65 [61–68]%, p=0.016) and more frequently administered Adriamycin (98% vs. 89%, p=0.022) than those without TRCD. On follow-up echocardiography, a drop in LVEF =5% within the first 3 months was more frequent in TRCD patients (78.3% vs. 38.4%, p<0.001). Regardless of baseline LVEF and Adriamycin treatment, a drop in LVEF =5% within the first 3 months of trastuzumab administration was strongly associated with the development of TRCD (adjusted HR, 45.1[17.0–127.6], p<0.001). During the median follow-up period (54.2 months), there were no instances of cardiac death or heart transplantation.

Conclusions: The overall incidence of TRCD was 7.4% in Asian patients who were treated with adjuvant trastuzumab for breast cancer. A decline in LVEF =5% within the first 3 months of trastuzumab initiation was strongly associated with TRCD development in patients with breast cancer.