

## COMMENTARY

## Comment on “Chemotherapy-Induced Left Ventricular Dysfunction in Patients with Breast Cancer”

Kadri Altundag

Department of Medical Oncology, Hacettepe University Cancer Institute, Ankara, Turkey

*To the Editor,*

I want to congratulate Yoon et al. [1], who investigated the incidence and predictors of chemotherapy-induced left ventricular dysfunction (LVD) in patients with breast cancer. They reported that low body mass index, advanced cancer stage, and the use of trastuzumab were independent predictors of chemotherapy-induced LVD in patients with breast cancer. In addition to these findings, new serum markers were identified for prediction of trastuzumab-related cardiac dysfunction (TRCD) [2]. Zardavas et al. [3] explored the prognostic value of cardiac markers (troponins I and T, N-terminal prohormone of brain natriuretic peptide) to identify patients at increased risk for TRCD among those with early-stage human epidermal growth factor receptor 2-positive breast cancer receiving trastuzumab (HERA substudy). The authors reported that elevated troponin I or T before trastuzumab therapy is associated with increased risk for TRCD. Associated with this, a recent study by Beer et al. [4] investigated new biomarkers associated with doxorubicin- and trastuzumab-induced cancer therapeutics-related cardiac dysfunction (CTRCD) using high-throughput proteomic profiling; they found that high baseline immunoglobulin E levels are associated with a lower risk of CTRCD, highlighting the role of the immune system as a potential mediator of CTRCD. Thus, evaluation of the aforementioned serum markers may improve the identification of patients at increased risk for TRCD.

### CONFLICT OF INTEREST

The author declares that he has no competing interests.

**Correspondence to:** Kadri Altundag

Department of Medical Oncology, Hacettepe University Cancer Institute, Tria Residence, Block A No. 8 Yildizevler Mah, Cankaya, Ankara 06100, Turkey  
Tel: +90-312-438-2526, Fax: +90-312-324-2009  
E-mail: altundag66@yahoo.com

Received: January 3, 2017 Accepted: February 6, 2017

### REFERENCES

1. Yoon HJ, Kim KH, Kim JY, Park HJ, Cho JY, Hong YJ, et al. Chemotherapy-induced left ventricular dysfunction in patients with breast cancer. *J Breast Cancer* 2016;19:402-9.
2. de Azambuja E, Procter MJ, van Veldhuisen DJ, Agbor-Tarh D, Metzger-Filho O, Steinseifer J, et al. Trastuzumab-associated cardiac events at 8 years of median follow-up in the Herceptin Adjuvant trial (BIG 1-01). *J Clin Oncol* 2014;32:2159-65.
3. Zardavas D, Suter TM, Van Veldhuisen DJ, Steinseifer J, Noe J, Lauer S, et al. Role of troponins I and T and N-terminal prohormone of brain natriuretic peptide in monitoring cardiac safety of patients with early-stage human epidermal growth factor receptor 2-positive breast cancer receiving trastuzumab: a herceptin adjuvant study cardiac marker substudy. *J Clin Oncol* 2017;35:878-84.
4. Beer LA, Kossenkov AV, Liu Q, Luning Prak E, Domchek S, Speicher DW, et al. Baseline immunoglobulin E levels as a marker of doxorubicin- and trastuzumab-associated cardiac dysfunction. *Circ Res* 2016; 119:1135-44.

*Authors' Reply*

We thank Dr. Kadri Altundag for the important comments on our study. We also wanted to investigate the role of natriuretic peptide and cardiac troponins in the prediction of chemotherapy-induced left ventricular dysfunction (LVD). This issue could not be evaluated because the present study was retrospective and cardiac biomarkers were not measured in many of the study subjects. We agree that the measurement of several cardiac biomarkers would be useful in the early identification of chemotherapy-induced LVD [1,2]. However, in the early-stage prediction of chemotherapy-induced LVD, the optimal timing for the measurement of biomarker remains unclear. Therefore, further large-scale randomized studies will be needed to investigate this issue.

## CONFLICT OF INTEREST

The author declares that he has no competing interests.

## REFERENCES

1. Zardavas D, Suter TM, Van Veldhuisen DJ, Steinseifer J, Noe J, Lauer S, et al. Role of troponins I and T and N-terminal prohormone of brain natriuretic peptide in monitoring cardiac safety of patients with early-stage human epidermal growth factor receptor 2-positive breast cancer receiving trastuzumab: a herceptin adjuvant study cardiac marker sub-study. *J Clin Oncol* 2017;35:878-84.
2. Beer LA, Kossenkov AV, Liu Q, Luning Prak E, Domchek S, Speicher DW, et al. Baseline immunoglobulin E levels as a marker of doxorubicin- and trastuzumab-associated cardiac dysfunction. *Circ Res* 2016;119:1135-44.

### Correspondence to: Kye Hun Kim

Department of Cardiovascular Medicine, Chonnam National University Hospital, 42 Jaebong-ro, Dong-gu, Gwangju 61429, Korea  
Tel: +82-62-220-6266, Fax: +82-62-220-6264  
E-mail: christiankyehun@hanmail.net