Strain-guided cardioprotection against trastuzumab-induced cardiotoxicity in patients with her2-positive breast cancer. PRECARD-GLS study.

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Abstract character count: 1590.
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**Introduction and objectives:** Global longitudinal strain (GLS) is a marker of early subclinical systolic dysfunction secondary to trastuzumab and is a predictor of cardiotoxicity, although there is no evidence for cardioprotective treatment in these patients with GLS impairment. The aim of this study was to assess whether a GLS-guided cardioprotection strategy reduces the incidence of cardiotoxicity in patients with HER2+ breast cancer treated with trastuzumab.

**Methods:** A retrospective cohort study involving 25 consecutive patients with HER2+ breast cancer treated with trastuzumab, assessed from January-2015 to March 2016 in a Cardio-Oncology unit, with baseline GLS and another every three months until the end of the year. Cardioprotective therapy was given if subclinical systolic dysfunction was present. They were compared with a control cohort of 24 consecutive patients with the same diagnosis, during the same period of time, in a conventional cardiology unit and with the same follow-up protocol, but with no GLS calculation.

**Results:** 7 patients (14.2%) developed cardiotoxicity at one year of follow-up, and it was significantly lower in patients with GLS-guided cardioprotection (1 patient, 4% vs 6 patients, 25%, \( p=0.03 \)). The variables independently associated with cardiotoxicity were follow up in a conventional cardiology unit and doxorubicin administration.

**Conclusions:** A global longitudinal strain-guided cardioprotection strategy reduces the incidence of trastuzumab-induced cardiotoxicity in patients with HER2-positive breast cancer, especially in high-risk patients treated with doxorubicin.

**Keywords:** trastuzumab, breast cancer, strain, cardiotoxicity, prevention.