HER-3 status by immunohistochemistry in HER-2-positive metastatic breast cancer patients treated with trastuzumab: correlation with clinical outcome

Stefania Gori1, Jennifer Foglietta1, Maria Grazia Mameli2, Lucia Stocchi1, Daniela Fenocchio3, Paola Anastasi1, Daniela Iacono1, Rachele Del Sordo2, Carlo Basurto1, Verena De Angelis1, and Angelo Sidoni2

1Medical Oncology Department, “S. Maria della Misericordia” Hospital, Azienda Ospedaliera di Perugia, Perugia; 2Institute of Pathological Anatomy and Histology, Perugia University, Perugia; 3Pathological Anatomy and Histology Service, Azienda Ospedaliera di Perugia, Perugia, Italy

ABSTRACT

Aims and background. HER-3 signaling might contribute to resistance to trastuzumab. To clarify the role of HER-3 in HER-2-positive breast cancer, it is important to evaluate the level of HER-3 and its correlations with clinical outcome in metastatic breast cancer patients treated with trastuzumab.

Methods. HER-3 status by immunohistochemistry was evaluated in HER-2-positive metastatic breast cancer patients treated with trastuzumab-based therapy at our institution. Two scorings were utilized for interpreting staining for HER-3, and the correlation between HER-3 status and clinical outcome was evaluated.

Results. We evaluated HER-3 status in 61 of 76 HER-2-positive metastatic breast cancers treated with trastuzumab-based therapy at our institution from 4/1999 to 3/2006. We observed 55.2% objective responses; median time to progression and overall survival from start of trastuzumab therapy were 9.6 months (0.921-78.87) and 29.1 months (1.4-129.5+), respectively. With a cutoff of 50% staining tumor cells, we found 30 HER-3-negative and 31 HER-3-positive tumors. HER-3 status was not significantly associated with clinical outcome, but a shorter time to progression and overall survival were observed in patients with HER-3-positive tumors.

Conclusions. HER-3 status by immunohistochemistry was not significantly associated with clinical outcome in HER-2-positive metastatic breast cancer patients. Further studies are necessary to evaluate the prognostic and predictive role of HER-3.

Key words: HER-2-positive metastatic breast cancer, HER-3 status, resistance to trastuzumab.

Correspondence to: Stefania Gori, Oncologia Medica, Azienda Ospedaliera di Perugia, Via Dottori 1, 06122 Perugia, Italy. Tel +39-075-5784099; fax +39-075-5287080; e-mail stefania.gori@tin.it

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