

S6. ASSOCIATION BETWEEN THE PROGESTERONE RECEPTOR AND HER-2/neu IN OESTROGEN-RECEPTOR POSITIVE BREAST CANCER

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Women with an oestrogen receptor (ER)-positive (+ve) breast cancer have variable benefit from hormone therapy. The quantitative expression of the ER and progesterone receptor (PR) has a predictive and prognostic value, but other molecular variables such as receptor co-activators and peptide growth factors also play a role. Correlations between these variables have been described, such as lower levels of steroid receptors in ER+ve breast cancers overexpressing HER-2/neu. We examined whether PR expression affects HER-2/neu status in women with an ER+ve breast cancer. Charts from 1567 consecutive women with an operable breast cancer, treated between January 2000 and March 2003 at the University Hospitals Leuven, were retrospectively evaluated. We excluded all women who had surgery for recurrent

breast cancer or following neoadjuvant treatment ($n=319$) and those with an ER-negative breast cancer ($n=246$). The correlation between the immunohistochemical (IHC) expression of PR and HER-2/neu was evaluated in all of the other women. ER, PR and HER-2/neu status was evaluated using IHC. IHC stains for ER (6F11/2) and PR (312) were semi-quantitatively evaluated using the H-score and DAKO-score for HER-2/neu.

Our study population included 1002 patients with an ER-positive tumour. PR was absent and HER-2/neu was overexpressed in 22.5% and 13.9% of cases, respectively. 21.3% of 777 ER+ve/PR-negative breast cancers overexpressed HER-2/neu, while this figure was 11.7% for 225 ER+ve/PR+ve breast cancers ($P < 0.001$). In multivariate analysis, taking other tumour predictors for HER-2/neu status into account, an absent PR ($P < 0.001$) together with a high tumour grade ($P < 0.001$) were both predictive for HER-2/neu overexpression in ER+ve breast cancer. The results show that an absent PR is an independent predictor of HER-2/neu overexpression for patients with an ER+ve breast cancer. Whether women with an ER+ve/PR-negative breast cancer need more aggressive therapy or a combination of hormone therapy and HER-2/neu antibodies than to women with ER+ve/PR+ve breast cancers will become apparent from the results of large breast cancer treatment trials taking all of these different variables into consideration.