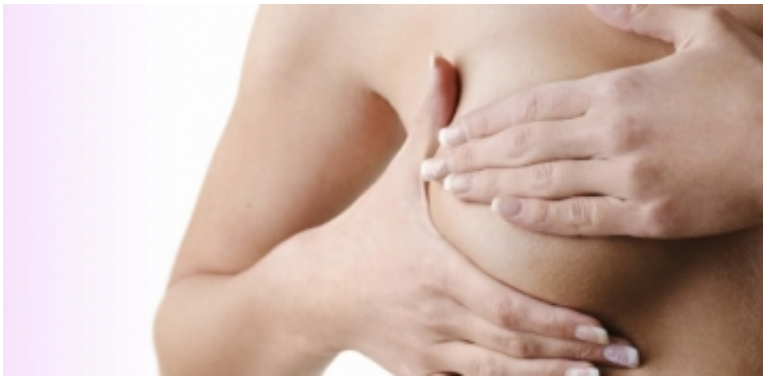
Pathological complete response predictor of favorable breast cancer outcome

April 2 2014



Results of EORTC trial 10994 appearing in the *Annals of Oncology* show that pathological complete response after neoadjuvant chemotherapy is an independent predictive factor of favorable clinical outcomes in all molecular subtypes of breast cancer.

Professor Hervé Bonnefoi of the Institut Bergonié Comprehensive Cancer Centre in Bordeaux and coordinator of this study says, "An analysis such as the EORTC's was needed to consider breast cancer heterogeneity. Until recently, a link between pathological complete response and excellent prognosis had only been shown for some specific subtypes of breast cancer, e.g. triple negative and HER2-positive breast cancers, albeit with conflicting results. We wanted to see if the prognostic implications of pathological complete response, TP53 status,

and the treatment administered (taxane or non-taxane) differed among breast cancer subtypes. We performed a landmark and two-step approach multivariate analyses to address these questions."

Patients in the intergroup EORTC 10994/BIG 1-00 phase III trial were randomized to receive either six cycles of anthracycline-based chemotherapy (non-taxane) or three cycles of docetaxel followed by three cycles of eprirubicin/docetaxel (taxane). Researchers used a landmark approach and a two-step multivariate analysis to study the potential effects of three interactions: breast cancer subtype and pathological complete response; breast cancer subtype and TP53 status; breast cancer subtype and treatment arm (i.e., taxane or non-taxane).

A patient was determined to have pathological complete response when no evidence was found of residual invasive cancer (or very few scattered tumor cells only) in the primary tumor and lymph nodes. According to this definition, pathological complete response was observed in 18% of the patients in this trial for whom sufficient data was available (1212 of the 1856 patients randomized).

In the univariate analyses there is no heterogeneity between the Hazard Ratios for pathological complete response in our study across the different subtypes. The prognostic effect of pathological complete response on event-free survival did not differ between breast cancer subtypes in a two-step multivariate analysis and was an independent predictor for better event-free survival (Hazard ratio (HR) = 0.40, P

The treatment administered, i.e., taxane or non-taxane, was an independent predictor only for event-free survival and favored treatment with taxane (HR = 0.73, P = 0.004). The interaction between breast cancer subtype and TP53 only approached statistical significance for event-free survival (P = 0.1).

Provided by European Organisation for Research and Treatment of Cancer