

# Breast cancer recurrence defined by hormone receptor status

October 1 2012

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Human epidermal growth factor (HER2) positive breast cancers are often treated with the same therapy regardless of hormone receptor status. New research published in BioMed Central's open access journal *Breast Cancer Research* shows that women whose HER2 positive cancer was also hormone (estrogen and progesterone) receptor (HR) negative had an increased risk of early death, and that their cancer was less likely to recur in bone than those whose cancer retained hormone sensitivity.

Breast cancer is a [heterogeneous disease](#) with many different subtypes. HR positive cancer is more likely to be luminal A or B type and be treated with endocrine therapy including tamoxifen or [aromatase inhibitors](#), while HR negative cancer is more likely to be basal or 'HER2-enriched'. HER2 positive cancers can fall into both of these categories.

A multicentre study from 13 National Comprehensive Cancer Network (NCCN) hospitals analysed data from over 3000 women diagnosed with early stage HER2 positive breast cancer. At first recurrence, most of the women in the study were treated with chemotherapy and/or with anti-HER2 therapy.

Dr Ines Vaz-Luis, who led the study revealed, "In this large group of patients with HER2 positive breast cancer, we found significant associations between presence of HR and presenting features, patterns of recurrence and [survival outcomes](#). In the first five years after treatment more women died from HR negative cancer than HR positive."

Recurrence in the brain or bone was also linked to receptor status, with more HR negative cancer in the brain and HR positive cancer in bone. About half of recurrent tumours tested had switched progesterone or estrogen receptor status (positive to negative or vice versa) or lost HER2 status during the study.

Dr Vaz-Luis, continued, "Based on our findings, HR status defines two different subsets of HER2 positive cancers. To combat this, we believe that studies which look at new drugs for treating HER2-positive [breast cancer](#) should also integrate hormone receptor status into their design."

**More information:** Impact of hormone receptor status on patterns of recurrence and clinical outcomes among patients with human epidermal growth factor-2-positive breast cancer in the National Comprehensive Cancer Network: a prospective cohort study Ines Vaz-Luis, Rebecca A Ottesen, Melissa E Hughes, P Kelly Marcom, Beverly Moy, Hope S Rugo, Richard L Theriault, John Wilson, Joyce C Niland, Jane C Weeks and Nancy U Lin, *Breast Cancer Research* (in press)

Provided by BioMed Central

Citation: Breast cancer recurrence defined by hormone receptor status (2012, October 1)  
retrieved 7 May 2023 from

<https://medicalxpress.com/news/2012-10-breast-cancer-recurrence-hormone-receptor.html>

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