

Research paper 14

Comparison of ER and HER2 expression in screen-detected and symptomatic invasive breast carcinomas: an audit

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Introduction and objectives: Invasive breast cancer (IBC) is the most common cancer among women, and the majority overexpress ER while a minority expresses HER2. Reliable receptor assessment is crucial to minimize false-negative and false-positive results that may lead to suboptimal or overtreatment, respectively. The objectives of this study were to assess the distribution of ER and HER2 expression in screen-detected and symptomatic IBC and to compare the results within these two groups and with the national data and data of the South-East region of the UK.

Methodology: The ER and HER2 status of the IBCs, screen-detected and symptomatic, reported on breast core biopsies at the Department of Cellular Pathology Jarvis breast screening center and Royal Surrey Hospital-NHS Foundation trust in one-year period from 01 June 2021 to 31 May 2022 were retrospectively reviewed. The Allred score of 0-1 for ER was considered negative and a score of 2 and above was considered positive. A HER2 score of 3+ was considered positive and 0 - 1+ was considered negative. A score of 2+ was considered following further investigations.

Results: There was a total of 606 IBCs [60% (n=362) were screen-detected and 40% (n=244) were symptomatic from 574 females between the ages of 28-100 years. Positive ER expression was seen in 94.5% (n=342) of screen-detected IBCs and 86% (n=209) of symptomatic IBCs. HER2 was positive in 7% (n=26) of screen-detected IBCs and 13% (n=31) of symptomatic IBCs.

Discussion and conclusion: ER expression was high in screen-detected IBC, while HER2 expression was high in the symptomatic group. The pattern of ER expression in this study was similar to that of the national and regional data but the HER2 expression was slightly lower. As the pattern of ER expression was similar to national and regional data, dissemination of results among clinical breast teams and re-auditing in 12 months was recommended. With the lower percentage of HER2 positivity, monitoring the EQA process, paying attention to the scoring system and re-auditing in 12 months was recommended.

Keywords: ER, HER 2, screen-detected, symptomatic, breast carcinoma

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