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Diagnostic performance of noninvasive imaging for assessment of axillary pathologic complete response after neoadjuvant systemic therapy in clinically node-positive breast cancer: A systematic review and meta-analysis

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Background: Neoadjuvant systemic therapy (NST) is increasingly used and can lead to downstaging of the axilla. Imaging modalities can provide information about the axillary response to NST and, therefore, tailor surgical management. The purpose was to perform a systematic review and meta-analysis to determine the diagnostic performance of noninvasive imaging modalities for assessment of axillary pathologic complete response (pCR) after NST in clinically node-positive breast cancer patients.

Material and Methods: PubMed and Embase were searched to identify studies that compare noninvasive imaging after NST with axillary surgery outcomes in patients with initial pathologically proven axillary lymph node metastasis. Two reviewers independently screened the studies and extracted the data. A meta-analysis was performed for axillary ultrasound and breast MRI to compute sensitivity and specificity for the identification of axillary pCR and residual axillary lymph node disease, respectively. For whole-body ^{18}F-FDG PET-CT, a meta-analysis was not possible due to the limited number of studies.

Results: Thirteen studies involving 2380 patients were included for final analysis. Of these patients, 1322 had undergone an axillary ultrasound, 849 a breast MRI, and 209 a whole-body ^{18}F-FDG PET-CT. Overall axillary pCR was 41.4% (986 of 2380). For axillary ultrasound, the pooled sensitivity and specificity were 65.3% (95% CI 55.4–74.0%) and 63.3% (95% CI 47.8–76.5%), respectively. For breast MRI, the pooled sensitivity and specificity were 77.2% (95% CI 63.5–86.7%) and 59.6% (95% CI 49.5–68.8%), respectively. For whole-body ^{18}F-FDG PET-CT, the sensitivity and specificity ranged from 84.6–86.0% and 21.9–63.2%, respectively.

Conclusions: The diagnostic performance of current noninvasive imaging modalities is limited to assess axillary pCR after NST in clinically node-positive breast cancer patients.

No conflict of interest.

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Quality of life in postmenopausal breast cancer patients with localized disease after 5 years of endocrine treatment: A prospective study

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Background: Quality of Life (QL) is a key target of the attention that is offered to breast cancer patients survivors. More research on the effect of endocrine treatment (ET) on QL is needed.

The aims of the present study are to assess QL in a sample of early-stage breast cancer survivors who had received 5 years of ET; to compare QL of ET groups, and study the changes in QL after ET cessation.

Material and Methods: A consecutive sample of stages I-III breast cancer patients treated at the Oncology Departments of the Complejo Hospitalario de Navarra was invited to participate in the study. Patients were postmenopausal at diagnoses and had just stopped ET after receiving either tamoxifen or aromatase inhibitor (AI) for five years. Patients had no relapse.

134 patients filed in the EORTC QLQ-C30 (general QL) and QLQBR45 (breast specific QL) questionnaires, 70 of these patients (>65 years old) filled in also QLQ-ELD14 (elderly specific QL) questionnaire. 74 consecutive patients have filled in the same QL instruments (48 also the QLQ-ELD14) six months after ET cessation.

Differences in ET modality (tamoxifen-AI) in QL (QLQ-C30, QLQ-BR45 and QLQ-ELD14) were studied through U *Mann-Whitney* test. These comparisons were confirmed through univariate logistic regression analyses using the categorized version of QL questionnaires areas as response variables and ET modality as explanatory variable. QL changes between the two assessments in the three QL questionnaires were assessed (Wilcoxon test).

Results: Mean age was 69 (range 50–93); 29 patients (21.6%) had tamoxifen, 54(49%) chemotherapy, 120(90%) radiotherapy; 94(70%) conservative surgery; 46(34%) limiting co morbidity.

QL scores were high in most areas (>80/100 points functioning, <20 points in symptoms areas) with moderate limitations (>30 points) in sexual functioning and enjoyment (breast specific), joint stiffness (elderly specific); and light limitations (20–30 points) in emotional functioning, sleep disturbance, pain, global QL (general QL); ET Symptoms, future worries (breast specific); and future perspective, worries about others, maintaining purpose and family support (elderly specific) areas.

Tamoxifen patients had less pain (7/100) and more constipation (7/100 small differences) (general QL); better sexual functioning (11/100 medium difference) and worse body image (6/100 small) (breast specific). These differences were confirmed in the univariate logistic regression analyses.

Changes between the two assessments appeared in pain (4/100 trivial change) (general QL), endocrine treatment (8/100 small) and sexual enjoyment (12/100 medium) (breast specific), with better QL in the second assessment.

Conclusions: Postmenopausal early-stage breast cancer patients adapted well to five years of ET and to their disease.

Few QL differences were observed between ET groups. There was some QL recovery after ET cessation.

No conflict of interest.

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The gene expression profile in clinically node negative T1–2 breast cancer patients: Its additional value in case of sentinel lymph node biopsy is not performed

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Introduction: Several trials are currently investigating whether the sentinel lymph node biopsy (SLNB) can be safely omitted in cT1-2N0 breast cancer patients treated with breast conserving therapy (BCT). A consequence of omitting the SLNB is the absence of pathological lymph node status information, as one of the indicators for the recommendation of adjuvant chemotherapy. Gene expression profiles (GEP) have been developed to select patients who most likely benefit from adjuvant chemotherapy. The aim of this study was to determine the value of GEP in cT1-2N0 breast cancer patients treated with BCT in whom the SLNB potentially could be omitted.

Methods: Data were retrieved from the Netherlands Comprehensive Cancer Organisation (IKNL). Patients were included in case of cT1-2N0 breast cancer treated with BCT, SLNB and in whom GEP (Mammaprint® or 21-gene Oncotype DX Breast Recurrence Score®) is performed. Patients were excluded in case of neoadjuvant treatment and age >70 years. Adjuvant chemotherapy recommendation was determined based on the breast cancer guideline and theonline prediction tool PREDICT, both forpatient's true pathological lymph node status and for unknown (e.g. negative) pathological lymph node status, as if SLNB is not performed. For each patient, recommendations based on the clinicopathological factors (breast cancer guideline and theonline prediction tool PREDICT) were compared with the outcome of GEP.

Results: GEPwas performed in 3,803 (18.4%) of the cT1-2N0 breast cancer patients treated with BCT. Based on breast cancer guideline, 93.5% had an indication for adjuvant chemotherapy compared to 42.9% using the online prediction tool PREDICT. Assumed that SLNB was not performed, the lymph node status changed in 736 of the 3,803 patients (36.6%). There was a change from recommendation to no recommendation for adjuvant chemotherapy in 239 of the patients. Of these, 201 (84.1%) had a genomic low risk and 38 (15.9%) a genomic high risk. The recommendation for adjuvant chemotherapy changed in 6.3% based on the breast cancer guideline and in 1.2% based on the online prediction tool PREDICT.

Conclusion: If SLNB is omitted, the recommendation for adjuvant chemotherapy will change due to unknown pathological lymph node status in only small percentage of the patients. If controversy based on the clinicopathological factors will remain, the 70-gene signature test Mammaprint® could be implemented for the recommendation of adjuvant chemotherapy.

No conflict of interest.