

199. Expression of non conventional hormonal receptors in breast cancer with special relation to response to neoadjuvant chemotherapy in Indian women

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Background: Breast cancer (BC), a heterogeneous disease comprises different tumour subtypes associated with varied clinical characteristics. Prognostic factors including age, tumour size, histological subtype and grade, lymph node status and the expression of estrogen receptor (ER), progesterone receptor (PR) and human epidermal growth factor receptor 2 (HER2) currently assist routine clinical management. The role of the androgen receptor (AR) and Vitamin D receptor (VDR) in breast carcinomas has drawn great attention in recent years. Breast cancer has long been associated with vitamin D receptor downregulation. This study evaluates the potential correlations of AR and VDR with BC and possible role as predictors response to neo adjuvant chemotherapy.

Methodology: Between June 2011 and Jan 2013, 116 breast cancer patients were enrolled. Tissue sections were immunostained for ER, PR, Her2 Neu, AR and VDR with immunoreactive (IRS) scoring. Patients with fibroadenoma (n=30) served as controls for VDR receptor status. The age of the patients ranged between 32 and 70 years. n=72 patients were subjected to neoadjuvant taxane and/or anthracycline based chemotherapy according to standard treatment guidelines. Clinical response was evaluated using WHO criteria.

Results: 31.5% of cases belonged to young age group (<40 years) with 48.0% of the patients were premenopausal; most common stage at presentation was Stage III (62.9%).

69.8% BC patients showed absent VDR expression. Among the VDR positive group, only 24.6% had high IRS (mean IRS score= 2.44+/-3.08) in contrast to all fibroadenoma patients who were VDR + with 93.3% having high IRS scores (mean IRS score of = 6.41+/-1.54) (p=0.001). In particular, AR expression was commonly observed in luminal A 21/27 (77.8%) and B 19/30 (63.3%) cancers, but was less frequently seen in hormonal negative tumors 25/59 (42.4%). Despite being defined by the absence of ER and PR expression and being considered hormonally unresponsive, 16/29 (55.1%) Her2 Neu enriched and 9/30 (30%) of TNBC expressed AR.

In patients offered NAC (n=72), response grading was done with majority of patients showing partial response (PR) (65.3%) and 12/72 (16.7%) patients having complete response (CR). Seven patients with progressive disease (PD) and 6 with stable disease (SD) who were non-responders, were offered different chemotherapy regimens. Complete response after NAC was significantly greater in VDR positive cases (76.92%) and further greater in high IRS group (100%). AR expression was higher in responders (55.3% in PR group and 50.0% in CR group) as compared to non-responders (16.7% in SD group and 28.7% in PD group).

Conclusion: Better response to NAC was seen in AR and/or VDR positive breast carcinomas compared to negative cases indicating a possibly increased chemotherapy response. As both receptors are confirmed as biologically relevant, it is possible that hormonal manipulations targeting them could be useful in treatment but large sample size is needed to deduce the final statement.

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200. A systematic review of minimal invasive ablative techniques in the treatment of breast cancer

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Background: The application of minimally invasive ablative techniques such as radiofrequency ablation (RFA), high intensity focused ultrasound (HIFU) ablation; cryo-ablation, laser-ablation and microwave-ablation in the treatment for breast cancer are an emerging area of expertise. We performed the first systematic review to evaluate the impact of these minimal invasive techniques upon objective outcome measures of breast cancer treatment.

Material and Methods: All studies published up to January 2014 that evaluated the role of ablative techniques in the treatment of breast cancers were identified using Medline/Pubmed, EMBASE and Cochrane library databases. Studies were considered suitable if they were performed on patients with breast cancers, objectively recorded imaging, histopathological outcomes and treatment times of the techniques.

Results: We identified 11 studies (10 cohort and 1 randomized control trial) involving 454 patients, which fulfilled our inclusion criteria. It was demonstrated that in terms of complete necrosis, staining with haematoxylin and eosin (H&E) reported the highest percentage of complete ablation for HIFU (100%) and RFA (94%) and staining with nicotinamide adenine dinucleotide (NADH) reported the highest percentages for RFA, cryo-ablation (both 95%) and laser-ablation (100%). Magnetic resonance imaging (MRI) was successful in demonstrating a decrease in post-treatment enhancement (pathognomonic of coagulative necrosis) and ultrasound imaging was able to accurately demonstrate the absence of residual tumour. Recorded complications included superficial skin burns in 10 patients (6%) and local pain in 24 patients (14%). HIFU and microwave-ablation reported the longest treatment time compared to other modalities.

Conclusion: Minimally invasive ablative techniques are able to successfully induce coagulative necrosis with a minimal side-effect profile and reliable follow-up imaging modalities. These minimally invasive technologies are promising but require assessment in prospectively conducted trials compared to the current surgical standard to validate their efficacy. *No conflict of interest.*

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201. Breast MRI and invasive lobular carcinoma: An update

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Background: Because of its diffuse growth pattern, breast invasive lobular carcinomas (ILC), compared to other invasive breast cancer subtypes, are more prone to: 1) misleading tumor size in mammography and ultrasound (MU); 2) multifocality, multicentricity and synchronous bilaterality. Although magnetic resonance imaging (MRI) doesn't bring any advantage in the management of other breast cancer subtypes, it is still indicated in ILC. Our aim was to determine the influence of MRI on breast ILC characterization and surgical outcomes.

Methods: This is a retrospective study of 70 consecutive women diagnosed with ILC (confirmed with histology and lack of E-cadherin expression) at a single institution, between 1/Jan/2007 and 31/Mar/2014. All underwent MRI, along with clinical examination and MU, and all underwent primary surgery. We evaluated the correlation between MRI and size of the tumor on final pathology, presence of occult lesions and change in surgical management.

Results: Twenty-six conservative surgeries and 44 mastectomies were performed. MRI overestimated tumor size by > 0.5 cm in 20.6% of tumors and underestimated tumor size by > 0.5 cm in 29.4%. MRI performed better than MU to correlate with tumor size in final pathology (R=0,748 Vs R=0,710; p=0.001). MRI showed 3/70(4,3%) occult lesions in the contralateral breast. Analysing only women that were initially proposed to conservative surgery (n=53), we defined three groups, after MRI: 1) 7(13,2%) patients in which MRI did not differ from MU; 2)