

study aimed to evaluate downstaging of axillary disease in "real world" practice.

Methods: Retrospective data analysis from two breast screening institutions, including all patients with axillary disease, undergoing NAC between May 2014–November 2017. Positive axillary nodes were defined as the presence of macrometastases on pathology.

Results: A total of 136 patients were included, with 76 axillary node clearances (ANC, 55.9%), 25 axillary node dissections/sampling (18.4%) and 35 sentinel lymph node biopsies (SLNB, 25.7%). In the ER+/HER2- group, the complete pathological response (pCR) rate was poor at 19.2%. All other molecular subgroups had a pCR rate of >50%. Follow-on ANC were performed in 3 patients (2%) with positive SLNB and axillary radiotherapy was given to 49 patients (28%).

Table 1
Pathological Response Axilla, n(%)*

Hormonal Receptor Status	Complete pathological response	Partial pathological response	No response	Progression	Total
ER-/HER2-	18 (56.3)	7 (21.9)	6 (18.8)	1 (3.1)	32 (23.5)
ER-/HER2+	22 (66.7)	6 (18.2)	2 (6.1)	3 (9.1)	33 (24.3)
ER+/HER2-	5 (19.2)	12 (46.2)	5 (19.2)	4 (15.4)	26 (19.1)
ER+/HER2+	25 (55.6)	14 (31.1)	1 (2.2)	5 (11.1)	45 (33.1)
Total	70 (51.5)	39 (28.7)	14 (10.3)	13 (9.6)	136

*excluding patients with a negative axilla on radiology and negative on pathology

Conclusion: An excellent pathological response to NAC was seen for triple negative and HER2+ breast cancers. OncotypeDX testing may be of benefit in the ER+/HER2- cohort.

P016. CAN WE USE OSNA (ONE STEP NUCLEIC ACID AMPLIFICATION) ROUTINELY IN DCIS? – A SINGLE CENTRE STUDY

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With DCIS, metastatic spread to the axillary lymph node is unusual but the assessment of sentinel node biopsy (SLNB) by OSNA has shown an increase in micrometastases. Our aim was to review how many patients with DCIS had a positive sentinel node.

Retrospective data from Jan 2005 to December 2016, 284 patients who had DCIS underwent SLNB were retrieved from hospital electronic records. SLNB was assessed by immunohistology until 2012 and from 2013 SLNB were assessed by OSNA and we compared the 2 cohorts.

Results:

		2005 – 2012 SLNB by immunohistology (220 Patients)	2013 – 2016 SLNB by OSNA (64 Patients)
Treatment	Mastectomy	133 (60.5%)	47 (73.4%)
	Wide excision	87 (39.5%)	17 (26.6%)
Grade	High	178 (80.9%)	52 (81.2%)
	Intermediate	40 (18.2%)	12 (18.8%)
	Low	2 (0.9%)	0
Size (mm)	<10	30 (13.6%)	8 (12.5%)
	11 – 20	38 (17.3%)	6 (9.4%)
	21 - 40	72 (32.7%)	22 (33.3%)
	>40	80 (36.4%)	28 (43.8%)
Microinvasion		69 (31.4%)	9 (11.7%)
SLN Status	Micro metastases	2 (0.9%)	14 (21.9%)
	Macro metastases	1 (0.5%)	0
Axillary Clearance		3 (1.4%)	3 (4.7%)

Conclusion: A significant increase in Micrometastasis with DCIS in the OSNA group No further nodal involvement in patients who had axillary clearance. OSNA can safely be used for DCIS and should not lead to over-treatment.

P017. ACCURACY OF PREOPERATIVE ULTRASOUND STAGING OF THE AXILLA A SINGLE INSTITUTE EXPERIENCE IN THE UK

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Background: Axillary node status remains one of the most important prognostic factors in breast cancer. Ultrasound of the axilla is still the only way of accurately staging of the axilla. The aim of this study is to evaluate the accuracy of pre-operative staging of the axilla in patients with suspected or confirmed breast cancer using an ultrasound (USS) machine.

Methods: 142 female patients have been diagnosed with breast cancer between March 2018–August 2018. 55 (screen detected), 86 (symptomatic) and one patient (family history clinic). All patients subjected to USS and core biopsy of lymph node if suspicious. Ultrasound of the axilla using a 12-16 MHz matrix line array transducer on a Toshiba Aplio ultrasound platform. The nodal morphology was recorded, including whether the outline of the node was smooth, uni or multi-lobulated with normal or absent hilum. If the lymph node was >10 mm in maximum longitudinal dimension, then a biopsy was taken. If > one node was identified, the most morphologically abnormal node was selected for biopsy.

Result: Out of 142 newly diagnosed breast cancers, 42 abnormal lymph nodes were identified and patients had ALND. 100 patients underwent SLNB with normal preoperative axillary USS staging. Sensitivity 70%(56-80), specificity 90%(83-95), PPV 80%, NPV 83%, false positive 17%, and false negative 16%. Positive SNB (18), 6 invasion >10mm, 5 between 5-10mm, and 7<5mm.

Conclusions: In our practice, ultrasound is still the most acceptable modality for preoperative axillary staging with an acceptable false negative rate comparing to meta analysis.

P018. IMPACT OF NEOADJUVANT CHEMOTHERAPY ON AXILLARY TUMOUR BURDEN

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Aim: Neoadjuvant chemotherapy (NAC) usually results in partial / complete eradication of cancer in the breast. We studied the impact of NAC on the axillary tumour burden in early breast cancer patients with node-positive axilla.

M & M: We studied the axillary outcome of patients diagnosed with node-positive axilla at the time of diagnosis by US-guided FNAC, and compared this between those who received NAC and those who had surgery first.

Results: 103 female patients were identified, 97 were suitable. One patient had bilateral node positive cancers. All had axillary clearance except 4 who had sentinel lymph node biopsy (SLNB). The baseline & outcome data is presented in the table below:

	Neoadjuvant Chemotherapy (n=48)	Surgery (n=49)
Median age (range)	54 (33-77)	65 (31-88)
Median primary tumour size on Ultrasound (mm) (range)	26 (7-50)	22.5 (0*-47)
Core biopsy histology		
Invasive Ductal	44	47
Invasive Lobular	4	2
Type of Surgery		
Mastectomy	25	30
Breast Conservation	23	19
Median no of nodes with macrometastases (range)	1 (0-29)	3 (0-59)
Median percentage of nodes with macrometastases (Number involved / Number removed) (range)	5 (0-95)	20 (0-100)

*not seen on US

Tumour reduction in axilla correlated with breast tumour reduction. Among 10 patients with complete imaging / clinical response to NAC, 8 had complete pathological response in axilla.

Conclusions: NAC significantly reduces tumour burden in axilla. Most patients with an excellent response to NAC will have similar response in axilla. Post NAC axillary staging by SLNB will reduce the morbidity of axillary surgery in these patients.

P019. FACTORS ASSOCIATED WITH COMPLETE PATHOLOGICAL RESPONSE IN THE AXILLA FOLLOWING PRIMARY CHEMOTHERAPY

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Introduction: Management of the clinically positive axilla, down-staged to clinically negative by primary chemotherapy is controversial. The 2017 St Gallen consensus proposed sentinel lymph node biopsy (SLNB) alone, providing three negative sentinel nodes are identified, but this has not become standard practice. This study aims to identify factors associated with negative axillary lymph node histology in these patients.

Method: Retrospective data was collected on breast cancer patients completing six cycles of primary chemotherapy, between 01/02/2014 and 31/01/2018. Patients were included if they were node positive on core biopsy histology prior to chemotherapy, down-staged to node negative on ultrasound, and underwent axillary lymph node dissection.

Results: Of 69 patients meeting the inclusion criteria, 46.3% (n=32) had pathological complete response (pCR) in the axilla. When complete radiological response in the breast occurred, 70.55% (12/17) of patients had axillary pCR, compared to 38.5% (20/52) where residual breast disease was seen radiologically (p<0.01, z test). The relationship between receptor status and axillary pCR is shown in table 1.

Conclusion: This study demonstrates that despite complete axillary radiological response following primary chemotherapy, over 50% of patients will have residual axillary disease. Patients with ER negative/HER2 positive disease had a significantly lower risk, however with limited further adjuvant treatment, thorough initial surgery is critical. Further consideration needs to be given therefore to usage of SLNB in these high-risk patients.

Table 1
Receptor status of patients with axillary pCR

	ER Positive	ER negative
HER2 Positive	53.8 % (7/13)	83% (10/12)
HER2 Negative	25% (7/28)	50% (8/16)

p<0.01, X²analysis

P020. THE USE OF INTRAOPERATIVE LYMPH NODE ANALYSIS WITH NEOADJUVANT CHEMOTHERAPY: A THREE-YEAR RETROSPECTIVE COHORT STUDY

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Introduction: The place for one-step nucleic amplification intraoperative analysis of lymph nodes (OSNA) in the neoadjuvant setting continues to be debated. The significance of nodal micrometastases remains unclear. Our aim was to review our experience and results of OSNA in patients with breast cancer who had received neoadjuvant chemotherapy.

Methods: Using a combination of online systems, data on all patients who had undergone OSNA over the last three years was collated to include response of nodes to chemotherapy, presence of macrometastases/micrometastases, receptor status and histological results of any subsequent axillary clearance.

Results: 68/288 OSNA patients had undergone neoadjuvant chemotherapy. Nodal macrometastases were found in 4 (5.8%), all underwent axillary clearance and 1 (25%) had positive histological nodes. Micrometastases were present in a further 15 (22%) patients, 6 (40%) of whom proceeded to clearance; 2 (33%) had further node involvement. 3 (4.4%) patients proceeded to clearance with negative OSNA results of

whom 1 (33%) had nodal involvement. 2 of these 3 patients had pre-operatively involved nodes on imaging.

HER2 positivity was seen in 75% of macrometastases but 33% of micrometastases.

Conclusion: In conclusion, there remains a need for further evidence and guidance for appropriate treatment of micrometastatic disease. Preoperative imaging and receptor status do not appear to provide a marker of positive nodal involvement in our cohort. Despite this, the study does demonstrate the effective use of OSNA over a three-year period, with only 1 missed metastasis, which was picked up via the use of preoperative imaging and clinical judgment.

P021. AXILLARY COMPLETE PATHOLOGICAL RESPONSE TO NEOADJUVANT CHEMOTHERAPY IN BREAST CANCER: CAN WE PREDICT IT?

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Introduction: The recommended surgical procedure for the involved lymph nodes (LNs) in breast cancer is axillary nodes dissection (AND), even after pathological complete response (PCR) to neo-adjuvant chemotherapy (NACT). Many trials are studying the benefit of re-staging the axilla post NACT with targeted nodes dissection (TAD) with the assumption that they can represent the whole axillary response, and if they show PCR then those patients can avoid the potentially morbid AND.

The TAD technique is showing promising results but still there are significant false negative rates (FNR). In this study our aim is to identify common imaging and/or histo-pathology characteristics in patients who showed PCR in the axilla. This subgroup, if found with predictable axillary PCR, can be a target for TAD in future studies with possibly less FNR.

Methodology: Retrospective data collected from all patients with axillary metastasis underwent NACT in our institution between 2009 and 2017. Pre and post-surgery imaging and final histopathology characteristics were compared to the axillary response to NACT.

Analysis done using R. Citation: R Core Team (2018)

Results: We found statistically significant association between PCR in the axilla and HER2+ve cancers (p=0.012), absent lympho-vascular invasion (LVI) (P<0.001), and complete main tumour response to NACT (P<0.001). Relation of axillary response to ER, PR, and MRI were statistically insignificant (P= 0.120, 0.249, and 0.310).

Conclusion: It is possible to find a subgroup with predictable PCR showing common characteristics like LVI negative, HER2 positive, and main tumour PCR. These findings can hopefully help in further prospective studies.

P022. RE-AUDIT OF ACCURACY OF AXILLARY ULTRASOUND SCAN IN DETECTING METASTATIC LYMPH NODE INVOLVEMENT IN BREAST CANCER PATIENTS

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Purpose: To compare the detection rate of USS for malignant lymph nodes using modified criteria of 2.5mm cortical thickness of lymph node with our previous audits which used the cortical thickness 3mm as a criterion.

Materials and Methods: In a year (01/04/16 – 31/03/17), we included 134 eligible patients. Cortical thickness of 2.5mm and cortical and hilar morphology of the lymph node were used as sonographic criteria. Trucut biopsy or FNAC were taken to confirm the metastasis. Normal sonography and negative tissue result of abnormal looking node led to SLNB. Positive tissue diagnosis led to ANC.

Results: Improved sensitivity of 69% compared to 56% and 57% in previous audits while maintaining the similar specificity of 92% compared to 93% and 91% in past years. These results are comparable to published data (sensitivity of 49%-94% and specificity of 53%-97%). Royal College of Radiologists' audit target is 50% sensitivity.

Conclusion: Even though we still have a considerable false negative rate particularly with low volume/burden axilla, reducing the cortical thickness to 2.5mm could improve the accuracy of ultrasound scan in detecting the abnormal lymph node in the axilla of breast cancer patients.