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The UK Breast Cancer Clinical Outcome Measures (BCCOM) Project

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Introduction: The BCCOM Project aims to set up routine methods to support the efficient, effective and confidential collection of data relating to symptomatic breast cancer patients diagnosed and treated in the UK.

Description: At the heart of the BCCOM project was the observation that cancer services already contribute breast cancer data to national datasets and that most of the data needed for an audit of symptomatic breast cancers could therefore be collected from tapping into existing sources such as the data currently collected by cancer registries and individual clinicians. In collaboration with the UK cancer registries, agreed data items for cancers diagnosed in 2002 were sent for validation to breast surgeons who were registered with the UK Association of Breast Surgery at the British Association of Surgical Oncology who had agreed to participate in the audit. Surgeons were encouraged to check their own data but could submit data unchecked into the audit.

Summary of results: Data were received from 11 cancer registries incorporating 191 consultant surgeons who contributed a total of 16,407 cases. 92.6% were invasive and 95% had a histological diagnosis. 37% underwent a mastectomy, 42% had breast conserving surgery, 12% had no surgery and for 9% the type of operation was unknown. Individual surgeons' mastectomy rates varied from 17.5% (caseload of 57 cases) to 77.1% (caseload of 70 cases). Overall, 54% of cases had hormone therapy, 59% chemotherapy and 63% radiotherapy. The proportion of cases undergoing chemotherapy and radiotherapy decreased with age while the proportion having hormone therapy increased.

Conclusion: The first year of the BCCOM audit was successful, with good quality data being collected for over 16,000 symptomatic breast cancers. The detailed audit of case ascertainment and data completeness undertaken in the first year of the BCCOM audit has been of benefit to cancer registries in helping them to identify missing data. The collaboration between cancer registries and surgeons encouraged by the BCCOM audit has helped to identify ways of improving the data collection process.

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Breast cancer in African women: the magnitude of the problem

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Introduction: Breast cancer is the second leading cause of death in women today (after lung ca) and it is the most common cancer among women worldwide. It represents 23% of all new cancer cases.

African women have lower lifetime risk of developing breast cancer compared to western countries, but unfortunately they have higher incidence in mortality rates from breast cancer.

Materials and Methods: This is an overview of breast cancer incidence and mortality in the African continent, based on review of literature and global cancer statistics regarding Africa.

Results: First, we should mention that there is a lack of epidemiological studies and proper cancer registries, throughout Africa. Only few data were available to be published:

There is a wide variation in breast cancer incidence all over the African continent, having the highest incidence in southern and northern parts of Africa.

But all African countries have higher mortality rates compared to developed countries.

African breast cancer patients are also more likely to be premenopausal. Incidence peaks between 35 and 45y, almost 10–15y earlier than peak incidence for western countries.

In addition, 60% of breast cancer patients present with locally advanced disease, most tumors have higher mitotic indices, and the majority of cancers are invasive duct carcinoma (85%).

In Egypt, second largest country in Africa after Nigeria, (population 72 Million) breast cancer is the first malignancy encountered in females. Average age at presentation is 47y (60% of the patients are premenopausal), 52% of cases have T2 and T3 tumors. Incidence of Lymph node metastasis may reach 70%, with high grade tumors and high mitotic activity.

Conclusion: Most of the African countries lack cancer registries. They all have limited resources causing absence of national screening programs, absence of cancer awareness, leading to delay in cancer diagnosis. African countries suffer also from many other health problems either communicable or non-communicable disease. A global action is warranted to establish national screening programs, national cancer registries and definitive treatment protocols.

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Weight and body mass index (BMI) affect HER-2 expression in postmenopausal breast cancer

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Background: In our population, HER-2 is expressed in 10.9% of primary breast cancers (J Clin Path 2005;58:611–6). Postmenopausal obesity is a risk factor for hormone sensitive tumours. These tumours are more likely HER-2 negative (Breast Cancer Res Treat 2005;91:81–7). We therefore hypothesised that postmenopausal obesity is associated with fewer HER-2 positive tumours.

Patients and Methods: Between January 1st 2002 and December 31st 2004, 549 postmenopausal women with a unilateral, not previously treated, operable breast cancer were evaluated the evening prior to operation for body weight, height, abdominal and hip circumference. Waist-to-hip ratio (WHR) and BMI [Weight/(Length in meters)^2] were calculated. HER-2 staining was done by immunohistochemistry (MoAbCB11) and scored between 0 and 3+. HER-2 negativity was defined as 0, 1+ or 2+; HER-2 positivity as 3+. We compared HER-2 negative patients with HER-2 positive patients for all parameters of body composition and assessed the frequency of HER-2 positivity in each quartile from the lowest (Q1) to the highest (Q4) for these same parameters.

Results: Length and WHR were not significantly different between patients with HER-2 negative and HER-2 positive tumours. Abdominal and hip circumference were lower in HER-2 positive patients. This trend however, was not statistically significant. In Table 1 mean values for weight and BMI are compared between HER-2 negative and HER-2 positive patients. Table 2 shows the proportion of HER-2 positive tumours per quartile for weight and BMI in all patients.

Table 1. Comparison of mean values for weight and BMI between HER-2 negative and HER-2 positive patients

	HER-2 negative		HER-2 positive		P-value
	N	Mean±SD	N	Mean±SD	
Weight (kg)	474	69.19±13.18	58	65.09±11.29	0.0215
BMI (kg/m^2)	472	26.98±9.21	56	24.93±4.27	0.0065

SD: standard deviation.

Table 2. Proportion of HER-2 positive tumours per quartile for weight and BMI in all patients (N = 549)

	HER-2 positivity (%)				P-value
	Q1	Q2	Q3	Q4	(Q1–Q4)
Weight	16.30	10.32	9.93	6.92	0.0214
BMI	14.50	12.21	10.69	5.19	0.0127

Conclusion: Low weight and low BMI are risk factors for HER-2 positivity in postmenopausal women with breast cancer. The linear decrease in HER-2 positivity per increasing quartile for both parameters suggests our hypothesis may be correct. Larger numbers of HER-2 positive cases may be required to confirm our findings for other parameters of body composition.

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Breast cancer – developing clinical guidelines for England and Wales

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Introduction: The National Collaborating Centre for Cancer (NCC-C) has been commissioned by the National Institute for Health and Clinical Excellence (NICE) to develop two evidence-based clinical guidelines for the NHS in England and Wales on the diagnosis and management of early and advanced breast cancer. These will make recommendations on

best practice based on evidence of both clinical and cost effectiveness. The scope of both guidelines is very broad and, given the time and resources available, it will only be possible to cover about 30 topics within each guideline. This means that topics of a high priority (either clinical or economic) will have to be chosen. We believe that it is important that this choice should not be based solely on the opinions of the guideline development groups but should be informed by the views of clinicians and patients.

Methods: A list of 140 potential topics covering the whole scope of both guidelines was developed in consultation with expert clinicians. This was sent out in questionnaire form to relevant patient organisations and also to breast cancer advisory groups in 32 locality-based cancer 'networks' across England and Wales, which are responsible for the organisation and quality of care in their area. They were asked to rate each topic on the basis of its clinical and cost impact priority. The results were aggregated and scored to generate a prioritised list.

Results: Results of this survey and prioritisation will be available for presentation at the conference.

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Occult primary breast cancer

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Introduction: 'Axillary lymphadenopathy without clinically palpable primary' is a rare clinical presentation of breast cancer. However, when a women presents with axillary lymphadenopathy as the only clinical sign, breast cancer is far more likely cause than others like lung cancer or lymphoma. A retrospective study was done at our centre and we reviewed the data of patients presenting with occult breast primary and axillary lymphadenopathy.

Materials and Methods: The unit database of last 30 years was searched and patients presenting with axillary lymphadenopathy alone, were identified. The clinical notes and investigation reports of these patients were studied in retrospect; data collected and analysed, and compared with available world literature.

Results: 21 patients were identified from the database of 9605 patients (incidence: 0.21%). 16 of these patients were postmenopausal and five were pre-menopausal. 13 patients presented with left and 8 presented with right axillary lymphadenopathy. One patient had opposite breast cancer treated 11 years back and one patient had adenocarcinoma cervix treated 2 years back.

2 primary tumours were found in ipsi-lateral breast on mammography and one primary tumour was identified on MRI. None of the 21 patients had systemic metastases on investigations at primary presentation.

8 patients had mastectomy as treatment and 8 patients had radiotherapy to the breast following axillary clearance. One patient had axillary clearance followed by tamoxifen only (due to medical condition), one patient had axillary clearance alone, one had axillary clearance followed by radiotherapy and chemotherapy (patient's choice), one had axillary clearance followed by chemotherapy (due to uncertain nature of histopathology) and one patient had axillary clearance and wide local excision and radiotherapy (primary tumour found on mammography).

20 patients had adenocarcinoma consistent with breast primary as their final histopathology and one patient had poorly differentiated metastastatic carcinoma of uncertain origin. Primary tumor was identified in 3/8 mastectomy specimens, who had negative radiology.

2 patients developed loco regional recurrence, one patient developed contra- lateral breast cancer, and one patient had renal cell cancer after 26years. 5 patients developed systemic metastases and died of disease, 6 died of old age and 10 are still alive and on follow up. The overall 5 years survival was76.47%.

Conclusion: Occult breast cancer presenting as axillary lymphadenopathy is a rare presentation. But breast cancer is the most common cause of metastatic axillary disease in women. There was preponderance in postmenopausal women in our study. Prognosis in this situation is good. New investigation modalities like PET and MR scan might help in the future to detect clinically occult primary breast cancer.

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Prophylactic mastectomy in women at high breast cancer risk. Are pathology results convincing?

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Objective: To evaluate the indications, techniques and pathologic findings of prophylactic mastectomy (pME).

Patients and Methods: Retrospective case note study of women with a strong familial breast/ovarian cancer risk undergoing a bilateral or contralateral pME during a 10 years' period at the University Hospitals Leuven, Belgium.

Results: We identified sixty patients. Almost half (n = 29) were mutation carriers for BRCA1 (n = 10), BRCA2 (n = 18) or HNPCC (n = 1). Thirty-one others with a strong familial breast/ovarian cancer risk either tested negative for the mutated genes (n = 20) or were not tested (n = 17). Several women (n = 39) had a personal history of breast cancer; 15 already underwent a therapeutic mastectomy.

The median time to decision for pME was 44 months. Mean age at pME was 43 years (range 29–64 years). Histopathology of the pME specimen revealed an invasive breast cancer in 2 patients whereas lobular and ductal carcinoma in situ were present in respectively 12 and 9 women. Other proliferative lesions like atypical ductal and lobular hyperplasia (ADH and ALH) and flat epithelial atypia (FEA) were found in 6 patients. Considering these different (pre-) invasive lesions together, they were present (solely or together) in a total of 21 patients (35%).

Conclusion: In our case series of 60 women with a strong familial breast/ovarian cancer risk and normal surveillance for breast cancer, pME revealed intra-epithelial neoplasia in 35% of the patients. Whether this procedure will affect survival of breast cancer is unknown but our data are helpful when counselling high risk women.

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Long-term registration of prophylactic mastectomy (PM) in BRCA1/2 mutation carriers and women at increased breast cancer (BC) risk due to a family history at a single institution

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Introduction: Women from a hereditary breast(/ovarian) cancer family (HB(O)C), especially BRCA1/2 mutation carriers, have a highly increased risk of developing BC. PM, being one of the available options in high-risk women, results in the greatest BC risk reduction. Long-term data on PM are scarse.

Methods: The findings concerning (bi-/contralateral) PM in 357 high-risk women (233 BRCA1/2-mutation carriers, 124 women from HB(O)C families so called 'non-carriers'), performed between January 1, 1994 and December 31, 2004, were prospectively collected. Relevant data, including dates of birth, death, and PM; occurrence of BC in relation to PM; mutation status and preoperative imaging examination results were extracted from the medical records. Results were analyzed separately for women without (unaffected, n = 178) and with (affected, n = 179) a history of BC at PM.

Results: The median follow-up after PM was 4.5 yrs. The unaffected group mainly consisted of BRCA1/2 mutation carriers (81%), while the percentage carriers/non-carriers in the affected group was 49%/51% ($p < 0.001$). The mean age at PM was 38 and 44 yrs for unaffected/affected women ($p < 0.001$). The mean age at PM for carriers/non-carriers in the unaffected group was 38 and 40 yrs, respectively ($p = 0.29$), while this was 43 and 46 yrs in the affected group ($p = 0.03$). Unexpected malignant changes were found in the PM specimens in 5 unaffected (3 DCIS, 2 invasive BC, 3%) and in the contralateral breast in 5 affected women (4 DCIS, 1 invasive BC, 3%). One woman in the unaffected, and 16 women in the affected group died of BC after PM. In one unaffected woman, distant metastases of BC were detected almost 4 yrs after PM, suggesting the presence of an occult BC at PM (not found). In the total group, no primary BCs occurred after PM.

Conclusions: Women identified as a mutation carrier opt for PM at an earlier age as compared to non-carriers, while the percentage of carriers/non-carriers choosing for PM is significantly different between women with and without a history of BC. Further, we found that the risk