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# Ovarian Function Suppression Plus Fulvestrant in Premenopausal Women with Metastatic Breast Cancer

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**Background:** Endocrine therapy is the preferred treatment for hormone-receptor (HR) positive metastatic breast cancer. In premenopausal patients eligible for endocrine treatment, ovarian function suppression combined with tamoxifen is superior to ovarian function suppression alone. Luteinising hormone releasing hormone (LHRH) agonists plus anastrozole yielded promising results in phase II studies. Fulvestrant, a pure antioestrogen, yields high rates of disease stabilization in postmenopausal women. Therefore, we investigated the feasibility and safety of fulvestrant plus goserelin in premenopausal women with HR-positive metastatic breast cancer.

**Methods:** Pretreated premenopausal patients with metastatic breast cancer eligible for ongoing endocrine treatment received fulvestrant 250 mg and goserelin 3.6 mg every four weeks as first- to fourth-line therapy. Clinical benefit rate (CBR; response rate plus disease stabilization  $\geq 6$  months) was defined as primary study endpoint; secondary endpoints were response rate (RR; CR + PR), time to disease progression (TTP), overall survival (OS), and toxicity.

Based upon previous data, a CBR of 50% was considered to indicate meaningful clinical activity; a CBR  $< 25\%$  was considered unacceptable. If  $\geq 11$  patients had clinical benefit, a sample size of 26 evaluable patients provides statistical power of 80% to reject the null hypothesis that CBR is  $< 25\%$  with an  $\alpha$  of 0.05.

**Results:** Twenty-six patients received treatment as scheduled. 81% were pre-treated with tamoxifen and 69% had received prior aromatase inhibitors in combination with goserelin. The majority of patients (69%) presented with visceral metastases.

Complete response was observed in a single patient, partial response in three and disease stabilization  $\geq 6$  months in eleven patients, resulting in a CBR of 58%. Median TTP was six months (95% CI, 2.4–9.6) and OS 32 months (95% CI, 14.28–49.72), respectively.

Treatment with fulvestrant and goserelin was well tolerated and none of the patients discontinued therapy due to toxicity. No case of grade 4 toxicity was recorded; grade 3 toxicities consisted of one case of pulmonary embolism (3.9%) and one case of grade 3 anorexia (3.9%), respectively.

**Conclusions:** Results suggest that the combination of fulvestrant and goserelin offers meaningful activity in premenopausal patients with HR-positive metastatic breast cancer and further investigation is warranted.

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# A United Kingdom National Survey of Breast Surgeons o Primary Endocrine Therapy of Early Operable Breast Cancer

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**Background:** A large number of elderly breast cancer patients in the UK and Europe are treated with primary endocrine therapy (PET), where patients receive an endocrine agent as the only treatment for their breast cancer. Despite this, PET remains one of the poorly studied areas in breast cancer therapy and very little is known about the practice of PET in Europe.

**Materials and Methods:** We sent a questionnaire comprising of 14 questions to 489 breast surgeons who were members of the Association of Breast Surgery, UK.

**Results:** 228 (47%) were returned; 220 from consultants and 8 from associate specialists. 93.4% of those responded use PET in elderly patients with early operable breast cancer. Among those 40% said 10% of their elderly patients were treated with PET while 2% said 70% received PET. The main indications for PET were unfit for surgery under GA or patient preference but 7.4% of surgeons would recommend PET even to a fit elderly patient. Letrozole is the drug of choice for 76% and tamoxifen in 10%. Follow-up varied widely but the majority of surgeons see PET patients 3 monthly and 34% use no imaging during follow up. 77% of surgeons have not formally audited their patients treated with PET. If the first drug used failed to control the tumour, 51% try another endocrine agent, 18% consider surgery and 2.3% use radiotherapy. When asked to guess the survival of a woman aged 80 living in the UK, over 70% of surgeons underestimated the expected survival.

**Conclusions:** This survey, for the first time, sheds some light on the practice of PET in a European country. Over 93% of UK breast surgeons use PET in elderly with surgically resectable breast cancer. Most use an

aromatase inhibitor. While most consider it in unfit, frail ladies, a minority would treat even fit elderly women with PET. Most have not formally audited the outcome of their patients treated with PET and underestimate the expected survival of elderly patients.

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# Triple Negative Breast Cancer – Experience of a Single Tertiary Center

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**Background:** Triple negative breast cancer (TNBC) accounts for approximately 15% of breast cancers in Western populations and is generally associated with poor prognosis. Racial differences in the incidence of triple negative breast tumors have been observed in Western populations; however, there are limited data regarding TNBC in Arab women.

**Material and Methods:** We analyzed pathological and clinical data from 519 women diagnosed with breast cancer at the American University of Beirut Medical Center between 1990 and 2001. Among these, 138 (26.6%) patients were identified as having TNBC and 381 (73.4%) patients had non-TNBC (HER2 positive, ER/PR negative 63 patients (12.1 %), ER positive, HER2 negative: 238 patients (45.8 %), ER positive, HER2 positive: 80 patients (15.4 %).

**Results:** The median age at diagnosis of the patients with TNBC was 50 years (range 26–81), for those with Luminal A: 52(27–83), for Luminal B patients 50(27–84) years and for HER2-overexpressive breast cancer was 42(32–78) years. The mean and the 5-year survival for TNBC was 7.9 and 74.5%, 9.2 years and 96.8% for Luminal A, 9.1 years and 91.1% for Luminal B, 7.6 and 84.9% for Her2+.(p = 0.001).

**Conclusions:** Compared to Western populations, women in our region present with all types of breast cancer at a younger median age with a higher proportion having the triple negative phenotype.

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# Introduction of a Novel Computerized Quantitative MR-based Breast Density Measurement System Using the Dixon Sequence

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**Purpose:** Breast density is one of the strongest predictor of breast cancer risk. To-date estimation of breast density is performed qualitatively using ACR-BIRADS and based on mammography (MG), a 2D-method using radiation and compression. To overcome the limitations of MG-based breast density measurement the aim of this study is to develop an accurate computerized observer-independent 3D breast density measurement system with MRI using the Dixon sequence.

**Material and Methods:** 35 women (mean 44 years) undergoing routine screening mammography with full-field digital mammography were included in this IRB approved prospective study and breast density and breast density was measured with MRI using the Dixon sequence at 3T Tesla (TR/TE 6 ms/ 2.45 ms/2.67 ms, 192 slices, matrix 352 x 352, 1 mm isotropic, TA 3:38 min), which acquired two datasets, one representing fatty and one fibroglandular tissue. The computerized MRI breast density measurement system calculated the percentage of fatty and fibroglandular tissue (%) and the total volume of the breast (cm<sup>3</sup>).

**Results:** Computerized quantitative breast density measurement using the Dixon sequence was successfully performed in 33 patients. In 2 patients the MRI dataset was severely hampered by motion artifacts and therefore no sufficient segmentation and breast density calculation was possible. MR measurements of fibroglandular tissue translating into breast density ranged from 3.5% to 60% (mean 22.3%). MR breast volume measurements ranged from 580.3 cm<sup>3</sup> to 3832.2 cm<sup>3</sup> (mean 2386.7 cm<sup>3</sup>).

**Conclusion:** MRI breast density measurement using the Dixon sequence is feasible and reliably allows assessment of breast density, a strong predictor of breast cancer risk.

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# Breast Cancer in Patients 40 Years Old or Younger Treated at the Department of Radiation Oncology of CHU Oran

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**Background:** The objective of this retrospective study was to discuss the clinical feature, the therapeutic results and the prognostic factors of breast cancer in younger women, in the Algerian west.