after (on the average) 78 months. In the obesity group (20% of patients) cancer of the second breast was diagnosed after 46 months, that is 30 months earlier than in the normal body weight group patients.

Conclusions: Patients after breast cancer treatment should be advised to keep a normal body mass index. Doing that may reduce the risk or may delay the development of contralateral breast cancer.

521 Poster

Parity and breast feeding are preventive measures for breast cancer in Iranian women

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Background: Breast cancer is the most prevalent cancer in Iranian women and the second cause of cancer related death after stomach cancer. Many factors are defined as preventive or predicting factors for it. Among them the parity and breast feeding are controversial issues. We conducted this case control study to find out the relation of parity and breastfeeding with breast cancer.

Material and Methods: The numbers of case and control group were 376 and 425 patients. A structured questionnaire that covered demographic criteria and breast cancer risk factors were filled up for each group. The two groups were matched by demographic variants, some reproductive issue and socioeconomic status. Odds ratio and 95% confidence intervals were computed as measures of association from the logistic models.

Results: Comparing ever vs. never breast feeding showed that it is significantly protective against breast cancer (P-value=0.0001, OR = 0.39, CI = 0.27–0.56). The trend of breastfeeding was significantly protective; this effect was essentially present in mothers who had breastfed until 48 months. To find out a meaningful duration with an effective cut of point, we calculated the effect of breastfeeding for a child comparing two period of less than 18 months and equal or more than 18 until 24 months, which statistically was significant (p-value=0.037, OR = 0.7, CI = 0.5–0.98) for duration of 18−24 months per child.

Conclusions: Base on the hypothesis of anatomical and physiological change in breast during pregnancy, parity and breastfeeding; we showed that full term pregnancy and parity significantly reduced the risk of breast cancer, the number of children should be limited to 1−3, and the best cumulative duration of breastfeeding is 25−36 months, never breastfeeding is a great risk comparing with ever breastfeeding. The duration of 18−24 months of breastfeeding per child was the best duration and most effective against breast cancer among Iranian women.

522 Poster

Prevalence of TP53 germ-line mutations in patients with early-onset breast cancer and different types of family history

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Background: Mutations in *BRCA1*, *BRCA2*, and *TP53* genes underlie familial and early-onset breast cancer, conferring a lifetime breast cancer risk of 43−85%. We aimed to estimate the contribution of *TP53* germ-line mutations to early-onset breast cancer (age $\leqslant$35 years) and to establish use of family history in identification of mutation carriers.

Materials and Methods: We analyzed 41 women with breast cancer (BC) diagnosed before the age of 36 years and a negative result for the *BRCA1* and *BRCA2* genes (analyzed by direct sequencing and MLPA). Patients were classified according their family history in three groups: A) no family history of cancer (n = 11); B) family history of breast/ovarian cancer (BC/OC) (n = 22); C) family history of other neoplasms (pancreas, kidney, brain, leukemia) without fulfilling the classical Li-Fraumeni criteria (n = 8).

The 11 exons of *TP53*, including the 5′UTR, 3′UTR, and the intron-exon boundaries were PCR amplified and directly sequenced. The analysis of large rearrangements was done by MLPA.

Results: Among the 41 women we identified two (4.8%) deleterious mutations, and both were observed in group C: c.375G>A in exon 4 (*splicing* mutation) and c.524G>A in exon 5 (p.R175H).

Conclusions: These preliminary results suggest that, after a negative result in the analysis of the *BRCA1* and *BRCA2* genes, *TP53* mutations may play a relevant etiological role in the genetic predisposition of early onset BC, especially in those families with presence of different neoplasms.

523 Poster

Breast cancer wait times: the journey from detection to adjuvant treatment

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Background: Wait times for breast cancer patients consist of three components: waits from detection to diagnosis, diagnosis to surgery, and surgery to treatment (systemic and locoregional). There is considerable literature on this third component, especially regarding waits to radiation therapy. We set out to document the first two pre-operative components. Additionally, with the evolution of prognostic and predictive makers and advanced imaging, we anticipated that there would be potential for further delay.

Materials and Methods: The study is a retrospective review of all adjuvant breast cancer patients referred to The Ottawa Hospital Cancer Centre (TOHCC) in 2008. TOHCC is a large regional centre serving a population of approximately 2 million. 949 patients were referred for breast cancer treatment in 2008, 735 of which were included in the analysis. Dates of screening procedures, biopsies, pathology reports, surgeries and treatment initiation were abstracted from the breast database. Time intervals were calculated for all patients where data was available. Wait time intervals were stratified by referring hospital class (academic, non-academic, or peripheral) and use of pre-operative MRI.

Results: The results were as follows, in medians: screen to biopsy, 18 days; biopsy to surgery, 48 days; surgery to marker report, 24 days; surgery to chemotherapy, 55 days; surgery to radiation, 74 days; surgery to hormone therapy, 58 days. Wait time intervals were compared between academic, non-academic, and peripheral referring hospitals, and were significantly different. Approximately 35 percent of patients had a preoperative MRI. Impact of MRI was highly significant in terms of the number of mastectomies performed, and the length of time to surgery. These data will be comprehensively presented.

Conclusions: Pre-operative waits are substantial and should be considered in evaluation of wait times. Both referring hospital, and completion of pre-operative MRI had significant impacts on wait times.

524 Poster

A new direction for multidisciplinary care for cancer patients

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Background: Menopausal symptoms are common following treatment for cancer, particularly breast and gynecological cancers. Across all trials of adjuvant endocrine therapy, vasomotor symptoms such as hot flushes are the most common side effect [1]. Up to 20% of breast cancer patients will consider stopping or do actually cease endocrine therapy because of menopausal symptoms [2,3], despite its established role in reducing recurrence. The nature, severity and causes of menopausal symptoms following hormone-dependent cancer are likely to differ from those seen in women with spontaneous menopause and management can be further complicated by the history of estrogen dependent cancer. Long term sequalae of early menopause is an important health issue for young cancer survivors. The management of menopausal symptoms has traditionally been by general practitioners and specialist gynaecologists and consists of supportive care, hormone replacement therapy and symptomatic treatments. Treatment of cancer patients with menopausal symptoms may be more complex as GPs and gynaecologists may be less confident about the potential interaction between cancer, its treatment and menopausal therapies [4]. Oncologists may have limited expertise in managing menopausal symptoms. As a result, there is a greater need for more information on how these symptoms affect women with a prior history of cancer and what long-term health consequences ensue, as well as how best to control them and within what setting.

Materials and Methods: Multidisciplinary management offers many advantages to cancer patients and health care providers. The authors have established a multidisciplinary (MD) research-based public clinic, servicing the entire state of Western Australia and comprised of gynaecologists, breast surgeons, an endocrinologist, oncologists, a psychiatrist, clinical psychologists, a physiotherapist, genetic counsellors, a dietitian and research staff.

Results: This paper presents information about the establishment of this clinical service and describes some of the factors important in developing the Menopausal Symptoms After Cancer (MSAC) service.

Conclusions: The MSAC service provides for individualised evidence based multidisciplinary management in an important area of cancer survivorship. In addition it also allows for unique educational and research opportunities and should be considered for replication in other health settings.

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525 Poster

Follow-up after breast cancer by primary care physicians in the Ile-de-France region

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Background: Due to the increase in new breast cancers and the improvement in long-term prognosis, follow-up (F/U) of patients (pts.) cannot be carried out entirely in specialized cancer centres. The Réseau Gynécomed was created to transfer the follow-up of patients to primary care physicians (PCP).

Material and Methods: Between July 1998 and October 2009, 1703 pts. with either early stage breast cancer, including DCIS, who did not received adjuvant chemotherapy, or with any non-metastatic breast cancer with at least 5 years event-free survival, were offered to be entirely followed by their PCP. Following informed consent, patients were regularly followed according to protocol with a bi-annual clinical examination during the first 5 years, and yearly thereafter, and annual uni/bilateral mammograms. The protocol required the PCP to address a F/U form to the referring centre at each consultation. The referring centre was required to see the patient for any new occurring event. Breast cancer events were regularly recorded, and patients satisfaction studies were performed.

Results: Nine centres in Paris and its region included 1703 pts. who were followed by 170 PCP, mostly medical gynaecologists. Six hundred twenty-four pts. (43%) were included at the end of treatment, and 825 pts. (57%) after 5 years of event-free F/U in the referring centre. As per October 2009, the median F/U was 28 months (range 0–129) and 42 events were diagnosed: 24 loco-regional recurrences, 5 distant metastases, 13 controlateral breast cancers. In addition, 9 non-breast cancers occurred. Seventy-two pts. were lost to F/U (5%). The mean delay between two 6-months scheduled F/U visit was 7.3 months; it was 11 months between two 1-year planned F/U. Average excellent satisfaction score measured on 1245 pts. was 83%.

Conclusions: This study showed that follow-up of early stage breast cancer pts. by their PCP was feasible. Compliance to follow-up protocol by PCPs was excellent, and patient satisfaction score was above 80%. Therefore, complete transfer of F/U to PCP of pts. with early breast cancer could represent a good alternative to F/U in cancer centres.

526 Poster

Multidisciplinary training for Senologists: experience of the Piedmont region

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Background: The guidelines on breast cancer recommend the establishment of "Multidisciplinary Breast Units". Therefore it is necessary that cases of breast disease are followed by a team consisting of specialists properly trained.

The training projects for Senologists must be able to provide 1) the ability to access, critically, to the scientific literature 2)the ability to participating in research trials 3) the most recent and updated technical skills within its own discipline and knowledge of other professionals involved in the team 4)to monitor its business practice through software, as such SQTM that measures the indicators of quality of diagnosis and treatment 5)councelling with the patient and within a working group 6)the ability to teach and pass on their experience.

Material and Methods: In Piedmont region is in the process of testing a draft training (FIM) funded by the Regional Oncology Network and with the Master's degree in Senology, in which participants, mentoring teachers, discuss clinical cases accompanied by illustrations for the verification of the correct diagnosis–treatment. During period 2006–2009 were held 50 monthly meetings and were presented 92 cases. From these have emerged the need to deepen and/or updates that have generated a series of training events.

Results: To evaluate the usefulness of the FIM were analyzed 1) the indicators of quality and 2) has been verified, through a questionnaire, the effective compliance of the requirements of the Breast Units. The results have been associated with the centres that have completed the training (FIM+) and compared with the volume of activity centres (low volume <50 new cases per year, medium 50–150, high >150). Analysis of the results showed that the FIM+ significantly affected the achievement of targets and, for some important indicators, irrespective of the level of activities. Instead multidisciplinarity was correlated with the volume and discussion of all clinical cases are regularly conducted in most FIM+ centres and at all centres with high volume and FIM+.

Conclusions: Preliminary analysis of data shows the effectiveness of training conducted under this model since it gave the possibility to change the way we work by encouraging group interaction and allowing the improvement of individual indicators.

527 Poster

High prevalence of BRCA1/2 mutations in female breast cancer (BC) patients with family history and triple negative phenotype (TNBC)

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Background: The prevalence of *BRCA1*/*BRCA2* mutations has classically been analyzed based on personal and family history of breast and ovarian cancer. It is important to know the prevalence of *BRCA1/2* mutations in patients with TNBC phenotype since germline status might be predictive of chemosensitivity.

Material and Methods: We analyzed the mutation status of 229 consecutive unrelated female BC patients from our hereditary breast cancer database that had undergone full genetic testing of *BRCA1*/*BRCA2* (direct sequencing and large rearrangement analysis). Univariate analyses were performed to compare the prevalence of mutations between TNBC and non-TNBC according to family history (breast/ovarian cancer in $1^{st}/2^{nd}$ degree relatives) and age at diagnosis (dichotomized at 50).

Results: Overall, 48/229 (21%) carried a mutation, 21 (9%) in *BRCA1* and 27 (12%) in *BRCA2.* TNBC were diagnosed in 54/229 (24%) women. 17/229 (7%) women had a TNBC and carried a *BRCA1/2* mutation *BRCA1* mutations were found in 28% (15/54) of TNBC versus 3% (6/175) of non-TNBC (Ratio 8.1, $p < 0.001$), while *BRCA2* mutations were more prevalent in non-TNBC (14% versus 4%, ratio 3.5, $p < 0.05$). All TNBC patients with a *BRCA1/2* mutation (17/54:32%, 15 in *BRCA1* (28%) and 2 (4%) in *BRCA2*), regardless of their age at diagnosis, had a family history of breast or ovarian cancer.

Conclusions: In our cohort, 32% of BC patients with TN phenotype and family history carry a mutation in *BRCA1/2*, regardless of their age at diagnosis. At the time of designing clinical trials *BRCA1/2* germline status should be considered in patients with TNBC and family history of breast/ovarian cancer.

528 Poster

Enhancing the quality of care in patients with breast cancer: seven years experience with a regional audit system

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Background: In order to increase the insight into the breast cancer care and to initiate care improvement initiatives, between 2002 and 2008, the