on AI and one (3%) on tamoxifen discontinued treatment during the first year due to musculoskeletal problems. Mean maximum difference between baseline and follow-up grip strength was −7 kPa for the left hand and −8 kPa for the right hand in AI patients, whereas a difference of −4.7 kPa and −5.6 kPa was assessed for the left and right hand in tamoxifen-users. Although patients who stopped AI treatment as a consequence of joint and muscle pains were characterized by a larger decrease in grip strength in both hands (−8.1 kPa in the left hand and −9 kPa in the right hand) compared with compliant AI patients, this difference was not statistically significant between compliant and non-compliant patients.

Conclusion Our preliminary results confirm that arthralgia is a substantial problem in patients treated with an AI and is an important reason for early treatment discontinuation. The decrease in grip strength over time was larger in AI than in tamoxifen treated patients. However, patients urged to stop AI treatment as a consequence of musculoskeletal problems only appeared to have small differences in loss of grip strength as compared to compliant patients. The predictive capacity of changes in grip strength for compliance is therefore questionable.

---

402   Poster

Rehabilitation in Breast Cancer. Arm Morbidity

P. Manosalvas[1], E. De Carlos Iriarte[2], C. Sanz Ferrández[1], M. Mosquera González[3], G. Rodríguez Caravaca[3], O. Hermes Guibert[3]. [1]Hospital 12 de Octubre, Gynecology, Madrid, Spain; [2]Hospital 12 de Octubre, Rehabilitation, Madrid, Spain; [3]Hospital 12 de Octubre, Madrid, Spain

There is a lot of studies about lymphedema (LF) in breast cancer (BC) and its relation to cancer treatment, there are a few studies about arm morbidity and the need for diagnosis and specific treatment of each condition in a rehabilitation service. There isn't studies about global risk for BC in the Spanish people.

Objective: Analysis of risk factors for arm morbidity in BC.

Materials and Methods: Material: Patients with BC and an early rehabilitation protocol according to BC clinical guide in Hospital 12 Octubre of Madrid.

Type of study: longitudinal prospective cohorts to 10 years (N = 476).

Statistical analysis: descriptive regional morbidities. Risk analysis, odds ratio, Xi-square and Fisher in the univariat analysis., multivariant logistic regression analysis.

Results: The most common morbility one month after the surgery is the limitation of mobility (18%), the pain is the most prevalent syntom during all period. Lymphedema starts between 6−12 months, with 18% at 10 years. The global relative risk (RR) is significant in obesity, extension node dissection and radiotherapy (p = 0.00), remaining in the multivariat analysis.

Conclusion: The most prevalent symptom was pain. Lymphedema was less frequent than in other series followed in a long time, probably produced because of early diagnosis and treatment. Morbility risk analisis in BC allows to do treatments in women with more risk of suffering adverse effects.

---

403   Poster

Cosmetic Results of High Dose Rate Brachytherapy Boost Versus Electron Beam Boost in the Treatment of Early Breast Cancer

A. Bhatnagar[1], R. Sharma[1], D.P. Singh[1], O.P. Sharma[1], A. Chougule[1], K.S. Jheetha[1], S. Sharma[1], S. Gupta[1]. [1]S.M.S. Medical College & Attached Hospitals, Radiotherapy & Oncology, Jaipur, India

Background: To evaluate the effect of high dose rate brachytherapy (HDR BT) boost versus electron beam boost on local tumor control, side effects and cosmesis after breast conserving surgery in early breast cancer.

Materials and Methods: 40 women with Stage I-II breast cancer who underwent breast conserving surgery were treated by 50 Gy adjuvant radiotherapy to the whole breast and then randomly assigned to receive 15−16 Gy boost to the primary tumor bed either with HDR BT (n = 20) or electron beam using linear accelerator (n = 20). HDR BT was performed using interstitial Iridium-192 temporary implants. Breast cancer related events, side effects and cosmetic results were assessed after one and a half year.

Results: There was no significant difference in local tumor control between patients treated with electron or HDR BT boost over a period of one and a half year in our study. Patients in the electron group had better cosmesis than those in the implant group, which was statistically significant. However, patients in the implant group had increased fibrosis and pigmentation than the electron group.

Conclusions: Patients with early breast cancer after undergoing breast conserving surgery and whole breast irradiation have better cosmetic results and reduced chances of fibrosis when they are given electron boost as compared to HDR BT boost. For local tumor control assessment long

---

term follow up studies are needed. Breast conservation therapy nowadays is an effective treatment for early breast cancer with more and more patients preferring this option due to better psychosexual quality of life.

---

404   Poster

Genome-wide Association Study in Breast Cancer Survivors Reveals SNPs Associated with Gene Expression of Genes Belonging to MHC Class I and II

H. Edvardsen[1], H. Landmark-Høyvik[1], V. Dumeaux[2], D. Nebdal[1], E. Lund[2], J. Tost[3], Y. Kamatani[4], V. Renault[4], A.L. Børresen-Dale[1], V.N. Kristensen[1]. [1]Dept. of Genetics Institute for Cancer Research, OUS Radiumhospitalet, Oslo, Norway; [2]Institute of Community Medicine, University of Tromsø, Tromsø, Norway; [3]Laboratory for Epigenetics, Centre National de Génotypage, Evry, France; [4]Laboratory for Bioinformatics, Fondation Jean Dausset − Centre d'Etude du polymorphisme Humain, Paris, France

Introduction: Breast cancer survivors differ from healthy women by having experienced tumor growth and having received cancer treatment, some of which administered over several years. However, the constitutive biology of BC survivors has not been the focus of any studies. We investigated the effect of genetic variation on gene expression in blood from a cohort of BC survivors. Further, we investigated the associations that were specific for BC survivors, by performing identical analyses for a group of healthy women, and exploring the associations occurring in breast cancer survivors only.

Methods: eQTL analyses in cis and trans were performed on 528,587 single nucleotide polymorphisms (SNPs) and 11,942 gene expression probes for 288 BC survivors (full data set). Further, using a subset of the data, comprised of 108,326 SNPs and expression data for 3,888 genes, eQTL analyses in cis and trans were performed on 288 BC survivors and on 81 healthy women separately and results were compared. Pathway analyses were performed for the unique 'SNP genes' and 'expression genes' involved in the significant associations.

Results: A larger number of cis-associations compared to trans were observed for the BC survivors using the full data set (24,035 vs 1,980, respectively, FDR <0.05). The genes were enriched for immune system-related processes. The expression of human leukocyte antigen genes was found associated with SNPs in 122 genes, in which the majority was located in the major histocompatibility locus I-III. The comparison analyses with healthy women revealed associations between 2,016 'SNP genes' and 847 'expression genes' in cis and 185 'SNP genes' and 145 'expression genes'in trans, which occurred specifically in BC survivors, and the cis-genes showed enrichment for immune system processes.

Conclusions: The results suggest that the immune system has a different constitution in BC survivors years after completed therapy, compared to healthy women. Expression of HLA genes in MHC class I and II in these BC survivors were associated with SNPs in 122 genes, in which the majority is located in the MHC locus on chromosome 6.

---

405   Poster

Triple Negative Breast Cancer: Perceptions of Prognosis, Psychological Impact and Care Needs

J. Glendenning[1], V. Pederson[2], A. Shewbridge[3], A. Tutt[3], A. Richardson[4], J. Armes[2]. [1]Kings College London and Guys and St Thomas' NHS Foundation Trust, Research Oncology, London, United Kingdom; [2]Kings College London, Florence Nightingale School of Nursing and Midwifery, London, United Kingdom; [3]Kings College London and Guys and St Thomas' NHS Foundation Trust, Florence Nightingale School of Nursing and Midwifery, London, United Kingdom; [4]University of Southampton, School of Health Sciences, Southampton, United Kingdom

Background: This longitudinal qualitative study explores changes in perception of diagnosis, prognosis, emotional distress (ED) and support needs over time in a cohort of women with triple negative breast cancer (TNBC) and a comparator receptor positive population.

Materials and Methods: Participants were recruited from two London cancer centres. In-depth, semi-structured, audio-taped interviews were conducted at the start (T1) and end (T2) of chemotherapy/radiotherapy treatment. Transcribed interviews were coded and analysed using Framework Analysis to identify individual and between-group differences at T1, and changes between T1 and T2.

Results: Ten women with TNBC were interviewed at T1, and 9 at T2 (one withdrew). Ten women were interviewed in the comparator group at T1 and T2. Interviews showed that women understand the relationship between receptor status and treatment options, but do not think about potential implications of this for prognosis. ED was not linked to receptor status at either time point. The major contributor to ED at T1 was potential negative impact of the disease and treatment on their lives. At T2 fear

of recurrence was the main source of ED. Potential distress arising from comparison between self and others with breast cancer was minimised through the rationalisation that 'everyone is different'. Coping with ED required individuals to minimise uncertainty about their own diagnosis. This was achieved though strategies which managed and interpreted information obtained from health professionals, other breast cancer patients and the Internet. A key aspect of this process was matching type and level of information sought to both their self-identified coping style and their ability to absorb and interpret it. Many participants followed advice from health professionals to limit searches for information on the Internet to professionally recommended cancer organisations. Feeling able to access health professionals to help interpret worrying symptoms or information made women feel less 'alone' and better able to cope.

Conclusions: Being able to access health professionals with questions or worries made women feel less alone. Person-centred individualised information and support helped women cope with the impact of disease and treatment on their everyday lives.

406   Poster

Quality of Life and Body Image in the Immediate Breast Reconstruction

R. Massa[1], E. Palma[1], D. Casella[1]. [1]Careggi, Breast Unit, Firenze, Italy

Background: Women with breast cancer may have specific problems adjusting to disease and treatment, as they are associated with significant alterations in body image and sexuality. Breast cancer patients appear to experience problems in many quality-of-life domains, including emotional and social functioning during and after therapy. Several studies suggest that immediate breast reconstruction after mastectomy improve quality of life and construct of body image. The aim of this study was to investigate breast reconstructive surgery has an effect on an individual's body image and evaluate quality of life (QoL) parameters in patients underwent immediate breast reconstruction after mastectomy.

Materials and Methods: Sixty woman who underwent immediate reconstruction after mastectomy or no reconstruction were recruited in our department. Average age was 49 years (range 30−65). All patients provided written informed consent for participation. Two standardized questionnaires were administered: Short Form 36 scale (SF36) to evaluate Quality of life (QoL), Body Image After Breast Cancer Questionnaire (BIBCQ) to measure the long-term impact of breast cancer on body image.

Results: The data were analyzed using the SPSS statistical package. Numerical outcome measures were compared using parametric methods where data was normal (ANOVA analysis). Binary outcomes were compared using odds ratios and tests of association (Pearson analysis). A strong negative relationship between body image and mental health (r −0.40, p < 0.01). A negative relationship between body image and vitality (r −0.29; p =.022) and emotional reactions (r−0.28 con p = 0.029). The vulnerability is strong negative relationship with general health r −0.45, p = 0.000. Negative relationship between transparency and mental health (r −0.32, p 0.013). Several linear regression analyses were conducted, whereby body image evaluation and physical health, and body image evaluation or mental health were included as independent variables. The results showed that independent variables was related to changes in physical health (β 0.01, p 0.82) or mental health (β 0.02, p 0.73).

Conclusion: Our results demonstrate that immediate breast reconstruction offers an important psychological benefits in patients with breast cancer. Qol improve after breast reconstruction. The SF36 scores for Mental Health and General Health Perception show positive correlation with vulnerability scale and a negative correlation with physical health. This study suggest that psychological well-being and quality of life of patients are an important goal in the management of breast cancer.

407   Poster

Facilitating Lifestyle Changes to Manage Menopausal Symptoms in Women with Breast Cancer: Delivering the Pink Women's Wellness Program

J. Porter-Steele[1], D. Anderson[2], P. Yates[2], A. McGuire[2], M. Hargraves[3]. [1]The Wesley Hospital Kim Walters Choices Program, Nursing, Brisbane Qld, Australia; [2]Institute of Health and Biomedical innovation Queensland University of Technology, Nursing, Brisbane Qld, Australia; [3]Haematology and Oncology clinics Australia, Nursing, Brisbane Qld, Australia

Background: After breast cancer treatment, women of all ages may experience menopausal symptoms as a side effect of their cancer treatment. Menopausal symptoms can be severe and have a significant effect on a woman's lifestyle. Research has shown that lifestyle changes can have positive effects on menopausal symptoms. The Pink Women's Wellness Program was developed to enable women to promote wellness after breast cancer and to manage these menopausal symptoms. The presentation will discuss the nurse-led delivery component of the program which is based on Banduras self efficacy theory.

Methods: This study's intervention utilises cognitive behavioural and instructional techniques to assist women to develop knowledge, skills and confidence in preventing and managing factors which may contribute to menopausal symptoms after breast cancer. Onsite registered nurses are trained in and deliver the intervention. As a multi-modal intervention, all components and delivery strategies listed may be used with each patient. However, the timing and application of these strategies are tailored, based on the patient's and nurse's assessment. The patients are provided with 3 individual one-hour consultations with a registered nurse trained in delivering the intervention, where the nurse outlines the 12-week program and provides the individual health education and goal setting sessions, along with a 12 week journal and book.

Results: The research identified that a nurse led lifestyle program was successful in changing women's menopausal symptoms. Cognitive behavioural techniques including goal setting and review appear to be key components of the program which have motivated the women to continue with the program. It is important when delivering programs that consideration be given to the training of breast care nurses include these behavioural components.

Conclusion: The incidence of breast cancer is increasing in most societies throughout the world. Women who have menopausal symptoms as a result of breast cancer treatment report these symptoms as distressing. Providing a lifestyle change program to manage menopausal symptoms in women with breast cancer can be effective and is crucial when hormone replacement therapy is contraindicated.