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Long-term Recovery From Hair Loss in Patients with Breast Cancer Who Have Received Chemotherapy

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Background: Chemotherapy-induced alopecia is the most troublesome adverse event in patients with breast cancer. Many studies have reported alopecia associated with chemotherapy, and care has been recommended. To our knowledge, however, no study has evaluated recovery from hair loss after the completion of chemotherapy.

Patients and Methods: In our outpatient clinic, we interviewed patients with breast cancer in whom at least 24 months had elapsed since the completion of preoperative or postoperative chemotherapy. Recovery from hair loss was evaluated as compared with before chemotherapy. The chemotherapeutic regimen comprised 4 courses of FEC (5-fluorouracil 500 mg/m², epirubicin 100 mg/m², and cyclophosphamide 500 mg/m², given once every 3 weeks), followed by 4 courses of docetaxel (75 mg/m², given once every 3 weeks) (FEC-DTX) or 4 courses of EC (epirubicin 90 mg/m² and cyclophosphamide 600 mg/m², once every 3 weeks).

Results: We interviewed 53 patients (40 in the FEC-DTX group and 13 in the EC group). The median age at the time of interview was 53.5 years (range, 31 to 65) in the FEC-DTX group and 54.0 years (range, 40 to 64) in the EC group. The median interval from the completion of chemotherapy to interview was 35 months (range, 24 to 45) in the FEC-DTX group and 38 months (range, 27 to 46) in the EC group. Overall, 7 patients (17.5%) in the FEC-DTX group and 6 (46.2%) in the EC group responded that their scalp hair recovered to a level similar to that before surgery. The main complaints in the patients who responded that their hair did not recover were as follows: overall decrease in hair volume in 11 patients, decreased hair volume on the top and front of the head in 19, and hair became weakened and unmanageable in 15.

Conclusion: A considerable number of patients with breast cancer who receive chemotherapy are concerned about long-term hair loss. We should pay attention to patients' hair for a prolonged period after the completion of chemotherapy and provide appropriate care as needed. At present, a prospective study is ongoing to further evaluate chemotherapy-induced alopecia in patients with breast cancer.

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The Association of Chemotherapy-induced Thrombocytopenia with CYP2C19 and ALDH2 Genetic Polymorphisms in Chinese Breast Cancer Patients

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Background: Chemotherapy (CT) is one of the treatments for patients with breast cancer. However, associated adverse events (AEs) are common, amongst which myelosuppression (neutropenia and thrombocytopenia) is one of the most severe toxicities. In this study, we examined the potential effect of genetic variations at rs671 of the *ALDH2* (Aldehyde dehydrogenase 2 family mitochondrial) gene, as well as rs4244285 and rs4986893 of the *CYP2C19* (Cytochrome P450 2C19) gene, on clinically significant CT-induced thrombocytopenia in breast cancer patients.

Materials and Methods: 205 Chinese females with early stage breast cancer underwent AC CT as part of the standard adjuvant therapy; AC consists of doxorubicin 60 mg/m² and cyclophosphamide 600 mg/m² given 3-weekly for 4 cycles. Patients were monitored for AEs including thrombocytopenia throughout the 4 cycles of AC. Toxicities were graded according to NCI CTC criteria (v. 3). DNA was extracted from the peripheral blood samples obtained from each patient at the start of AC. Genotypes of the 3 SNPs were determined using allele-specific Tm-shift PCR and melting analysis. Cochran-Armitage test for trend was used to examine for association between thrombocytopenia in patients and the 3 SNPs.

Results: Patients were categorized into 'non-thrombocytopenic' group if there was no thrombocytopenia throughout AC (83%), or 'thrombocytopenic' if they suffered thrombocytopenia of grade I or above during any AC cycle (17%). The genotype frequency distributions of all 3 SNPs were significantly different between the non-thrombocytopenic and thrombocytopenic groups ($P=1.8E-7$ for rs671, $P=3.69E-9$ for rs4244285, and $P=1.54E-40$ for rs4986893). The odds of developing thrombocytopenia in patients carrying the risk allele at each SNP (A-allele for all three SNPs) was 4.3-fold higher for rs671 ($P=4.74E-8$), 5.6-fold higher for rs4244285 ($P=6.36E-10$), and 923.7-fold higher for rs4986893 ($P=4.68E-72$).

Conclusion: In this study, we detected a strong association between *ALDH2* and *CYP2C19* genes variations and the risk of developing thrombocytopenia in breast cancer patients undergoing AC. Our results suggest that the 3 SNPs on these 2 genes might be good pharmacogenetic markers for the prediction of thrombocytopenia during AC. Detection of these genetic polymorphisms may contribute to the development of personalized medicine that could minimize thrombocytopenia in cancer patients receiving CT.

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Quality of Life of Breast Cancer Patients Medicated with Anti-estrogens, 2 Years After Acupuncture Treatment: a Qualitative Study

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Background: Breast cancer patients with estrogen receptor positive tumours are medicated with some type of estrogen antagonist for a minimum of five years, many experience side-effects that affect their quality of life. The aim of this study was to examine the quality of life of this patient group, 2 years after having acupuncture treatment for hot flashes.

Methods and Materials: Our sample was taken from women who had recently participated in a randomized controlled trial investigating the effects of acupuncture on hot flashes, a side effect of estrogen-antagonist treatment. Forty-one women from the true acupuncture treatment group and 41 women from the control group (sham acupuncture), who had 2 years previously received a course of 15 acupuncture treatments over a period of 10 weeks, were asked to answer an open question. The question, 'Would you like to share your thoughts and experiences related to your breast cancer diagnosis, treatments or anything else?' was by being open, broad, and nonspecific, intended to stimulate subjective information, which was not included in the original, or future quantitative studies. Qualitative data were analyzed using systematic text condensation.

Results: Most women were troubled by two or more side effects due to anti-estrogen medication, negatively affecting their life quality. Symptoms included hot flashes, sleep problems, muscle and joint pain, arm edema, fatigue, weight gain, depression, and lack of sexual desire. Women previously treated with sham acupuncture complained that hot flashes were still problematic, whilst those previously treated with traditional Chinese acupuncture found them less of a problem and generally had a more positive outlook on life. These results compare favorably with the findings from our original study that measured quantitatively health related quality of life.

Conclusion: Side effects due to anti-estrogen treatment seriously affect the quality of life of breast cancer operated patients. Patients who had previously been treated with traditional Chinese acupuncture complained less of hot flashes, and had a more positive outlook on life, than women who had previously been treated with sham acupuncture.

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Breast Cancer as Day-surgery – Experiences After the First Year

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Introduction: Breast cancer patients have until recently been regarded as unsuitable for day-surgery due to a misconception of special needs for close support by health care professionals during a hospital admission. We challenged this concept and reorganized the majority of the breast cancer surgery to outpatient treatment and present our experiences after the first year.

Material and Methods: By January 1st 2009 two third of the operating capacity for breast cancer was moved to the department of same day surgery. Drain free operation was standard. The following procedures were found suitable for same day surgery: breast conserving surgery, sentinel node procedure and axillary lymph node dissection. Comorbidity with ASA score ≥ 3 or no close relative at home during the first postoperative night precluded outpatient treatment. 276 patients had surgery due to a de novo breast cancer of which 178 were treated as outpatients.

Results: The rate of surgical site infections was 7% in the outpatient group compared to 14% in the inpatient group. Postoperative wound haemorrhage occurred in 4% of the patients in each group. 30-days readmission rates were 7% in the outpatient group and 13% in the inpatient group. Patient satisfaction was perceived as high but an on-going study is designed to evaluate this in details.

Conclusion: Breast cancer surgery can be performed as an outpatient procedure with acceptable complication rates and low readmission rate. No patients expressed concern or discomfort by the outpatient procedure.