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Tolerance of concurrent adjuvant trastuzumab and radiotherapy, involving in most cases the internal mammary chain, for breast cancer: results from a prospective study

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Background: To evaluate the tolerance of a concurrent adjuvant trastuzumab (T)–radiotherapy (RT) for breast cancer (BC), especially in the case of internal mammary chain (IMC) irradiation.

Material and Methods: Prospective study of 106 patients (pts) treated at the Institut Curie (IC) between 06/2003 and 03/2007 by concurrent T-RT for non-metastatic BC. The perfusion of T started either with or after chemotherapy. RT consisted of either whole breast (+/− boost) or chest wall normo-fractionated irradiation. When indicated, IMC and supra/infra-clavicular lymph nodes were also irradiated. Left ventricular ejection fractions (LVEF) were assessed at baseline, before start of RT (pre-RT), after completion of RT and then every 4−6 months with either echocardiography or multiple gated acquisition scanning. All toxicities were evaluated using CTCAEV3.

Results: Median age was 52 years (range: 25−70). Chemotherapy with anthracycline was administered in 92% (97 pts), with an epirubicine median total dose of 496 mg/m^2. All but two pts (treated weekly) received T every three weeks (8 mg/kg followed by 6 mg/kg) for a median duration of 11 months (3−40). LVEF at pre-RT was $\geqslant$50% in 99 pts (100%, 7 missing data). The treated breast was the left one in 44% (47 pts). The IMC was irradiated in 83% (88 pts) and the left side IMC in 38% (40 pts).

After a median follow-up of 28 months (range: 14−60 months), 105 pts (99%) were alive and 1 had died of cancer progression.

Acute skin reactions occurred in 103 pts: 87 grade 1, 14 grade 2 and 2 grade 3. Acute esophagitis occurred in 13 pts: 10 grade 1; 2 grade 2, and 1 grade 3; all had received concurrent radio-chemotherapy.

A grade $\geqslant$2 left ventricular systolic dysfunction occurred in 5 pts: 3 asymptomatic grade 2 (i.e. LVEF 40%-50%), 1 reversible grade 2 with myocardial infarction and 1 reversible grade 3 (i.e. LVEF 20%-40%). Of 101 pts with sequelae and toxicity assessments after 6 months, late telangiectasia grade 1 occurred in 5 pts, local pain in 22 (19 grade 1 and 3 grade 2), fibrosis grade 1 in 16, and grade 1 dyspnoea in 1 pt.

Conclusion: In this prospective study of breast cancer patients treated with, in most cases, anthracycline-based chemotherapy and IMC irradiation, concurrent trastuzumab-radiotherapy was deemed acceptable. Further follow-up is still needed.

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The physical activity level after the treatment for breast cancer: one-year follow-up

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Background: The physical activity level after the treatment for breast cancer becomes more and more important because of the increasing number of breast cancer survivors. The pattern of change of the physical activity level over time among breast cancer patients is not investigated in many studies. In addition, there is a limited amount of information about the predictive factors for a decreased physical activity level twelve months after the surgery in comparison with the preoperative level.

Material and Methods: Patients with a primary breast cancer (N = 267) filled in the Physical Activity Computerized Questionnaire before the breast surgery and 1, 3, 6 and 12 months after the surgery. This questionnaire collects information about the occupational, sport and household activities of the patient. It registers also patient-related factors, as age, body weight, body height, marital status and educational level. Disease-related factors, as tumour stage and lymph node stage, and treatment-related factors, as type of breast surgery, surgery at the dominant side, type of axillary surgery, level of axillary surgery, radiotherapy, chemotherapy and hormonal therapy, were abstracted from the medical file of the patient. In addition, 12 months after the surgery the arm volume and the shoulder mobility was measured of both arms.

Results: The total activity level of the breast cancer patients was decreased with 14% (34 MET-hours/week) the first month after surgery and respectively with 12% and 9% after 3 and 6 months. After one year, the activity level was still significantly decreased with 6% (14 MET-hours/week). At 12 months, only 79 of 145 preoperatively employed patients (54%) were working and 119 of 144 preoperatively sporting patients (83%) were doing some sport. Furthermore, the household activities were still decreased with 16% (6 MET-hours/week). At 12 months after the surgery, a higher decreased physical activity level compared with the preoperative level was associated with a lower age of the patient (<60 year) and having received chemotherapy. No association could be found with the other patient, disease and treatment-related factors.

Conclusions: The study shows that one year after the surgery for breast cancer, the physical activity level is still significantly decreased. Breast cancer patients and in particular those at risk for a decreased physical activity level should be detected and stimulated to increase their activities.

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Consumption of tranquilisers, chemotherapy and long term cognitive impairment in French young breast cancer women

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Background: Cognitive impairment (CI) is common just after cancer treatments, but little is known about long term effects of chemotherapy on cognitive function

Materiel and Methods: since July 2005, all consecutive women included in the registry of the National Health Insurance Fund (NHIF) for a diagnosis of primary breast cancer, aged 18−40 years and living in South Eastern France have been asked to participate in a 5 years follow-up, including a mailed self-questionnaire in the month after diagnosis and then telephone interviews. Medical record is yearly collected from physicians, and data about psychotropic and hormonal therapy drugs delivery are collected through the NHIF database. Until March 2009, 153 women answered the 10, 16, and 28 months interviews. At each interview, cognitive impairment (CI) was defined as self-report of frequent memory loss and attention deficits.

Results: Of the 153 women, 9% had a stage 0 tumour, 32% a stage I, 43% a stage II and 16% a stage III. All had surgery, 79% chemotherapy and 90% radiotherapy. Hormonal adjuvant therapy was prescribed to 54.2%, 64.1% and 64.1% during the respective periods: in the 10 months after diagnosis, 10 to 16 months after diagnosis and 16 to 28 months after diagnosis. In parallel, 60.1%, 31.4% and 34.0% were delivered tranquilisers during the same three periods. CI was reported by 40.5%, 38.2% and 39.2% at the 10^h, 16th and 28th month's interview respectively. Tranquilisers delivery was associated with CI self-report at each interview, chemotherapy was only associated with CI self-report at the 28th month interview. In the 28 months multivariate analysis, besides chemotherapy and tranquillisers consumption, a low level of education, and not being a French native woman were also associated with CI. Age, pre-existing cognitive troubles, and hormonal adjuvant therapy were unrelated to self-report of CI.

Conclusion: More than one third of young women report CI in the 2 years after breast cancer diagnosis. In the first months after diagnosis, CI self-report is mostly associated with psychological factors and tranquillisers consumption. Two years after, women who received chemotherapy are more likely to complain about CI, irrespective of their consumption of tranquillisers. Physicians should better consider long-term complains about CI in women who received chemotherapy, as CI may compromise the return to a "normal life" especially among those who suffer from psycho-social vulnerabilities.

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Prevalence of lymphoedema 5 years after breast cancer surgery

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Background: Lymphoedema is a frequent complication after breast cancer surgery. Lymphoedema can be defined as a volume difference of more than two hundred millilitres between affected and unaffected arm, a difference between the sum of arm circumferences of more than five centimetres, or a positive answer to the question whether patients have complaints of lymphoedema. Also bio-impedance spectroscopy can be performed to compare the affected side with the non-affected side. The objective of this study was to determine the prevalence of lymphoedema five years after breast cancer surgery.