Introduction and objectives.- The aim of this study was an assessment impact physical exercises on prevent deterioration in hemorheology, metabolic and inflammatory marker changes during radiotherapy (RT) for patients with localized non-early stage prostate carcinoma (PCa).
Material and methods.- Fifty-four men were randomized before they received radical RT for PCa, with 27 men to an exercise group (EG) and 27 men to a control group (UG). Outcome measures were blood parameters, serum levels of hepatic and renal function biomarkers (urea, creatinine, AspAT and AlAT, PSA) and cytokines (IL-1(, IL-6, TNF-() in a modified shuttle test before and after RT.
Results.- The hemorheology were decreased (*P*Ý<Ý0.05) in most parameters after RT as well as the liver, renal biomarkers and PSA did not change (*P*Ý>Ý0.05) in both group. Level of IL-6 was increased in both group after RT, but statistical significantly in EG. Other cytokine levels decreased in EG (*P*Ý>Ý0.05).
Discussion.- The physical activity in PCa patients during RT did not influence on blood parameters, they were decreased after treatment but in this time serum levels of IL-6 was increased in contrast to other pro-inflammatory cytokines (decrease IL-1(and TNF-(). This pilot study evidence the beneficial effects of physical exercise on cancer treatment.

http://dx.doi.org/10.1016/j.rehab.2014.03.1350

CO67-001-e

Communication of an oncology and rehabilitation team with their cancer patients

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Keywords: Surgical oncology; Musculoskeletal disorders; Physical training; Communication
Introduction.– Cancer patients may experience musculoskeletal disorders due to the primary neoplasm, surgical and oncological treatments, or due to their age and comorbid conditions. These lead to difficulties in performing the everyday activities, professional and social limitations, as well as psychological deficits.
Material and methods.– This is a cross-sectional study performed in a surgical oncology unit. Fifty-four patients with neoplasms underwent a surgical treatment. Afterwards they were addressed to a rehabilitation specialist who performed progressive physical training. After one month the 52 surviving patients completed a questionnaire focused on their communication with the interdisciplinary oncology and rehabilitation team.
Results.– Over 70% of patients knew why they were admitted in the surgical oncology unit, were informed about the type of surgery and about the disease stage, complications and life expectancy. Over 85% of patients considered the rehabilitation program necessary for their physical and mental health status.
Discussion.– The communication of cancer patients with their oncology surgeons and rehabilitation specialists is important in biopsychosocial understanding of illness, identifying the needs and resources for individuals to have a better life.
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http://dx.doi.org/10.1016/j.rehab.2014.03.1351

CO67-002-e

Our experience of rehabilitation in early postoperative period after breast cancer surgery

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Introduction.– The study aimed to explore the use of multidimensional rehabilitation in early postoperative period after breast cancer surgery.
Methods.– Analysis was performed prospectively and retrospectively at study cohort (178 female, 30–72 years) and control cohort (150 female, 33–74 years) of surgically treatment breast cancer patients. Rehabilitation therapy was provided at study cohorts next day after surgery. It included physical activities of patients, massage in the electrostatic field, common magnetotherapy. Effectiveness was analyzed by presence of pain, edema and chylorrhea, which were clinically in the early postoperative period and at follow-up visits at 6 months.
Results.– Hospital stay in patients who received early rehabilitation was 4–5 days less than in the control cohort. The presence of the pain, edema and chylorrhea were noted among the study cohort in 10%, 24%, and 18% and were lower compared with control group—12%, 29% and 24% respectively. The follow-up comparison at 6 months demonstrated the pain and edema in 32% and 41% in study cohort whereas these markers significantly higher in control group—48% and 63% respectively.
Discussion.– Early postoperative multidimensional rehabilitation at surgically treated female breast cancer patients significantly decreased treatment-related morbidities after primary treatment.

http://dx.doi.org/10.1016/j.rehab.2014.03.1352

CO67-003-e

Multidisciplinary rehabilitation program after breast cancer: Potential benefits analysis on physical function and quality of life

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Keywords: Breast cancer; Rehabilitation; Quality of life; Physical and psychological states
Objective.– To determine the potential benefits, both physically and psychologically, of a multidisciplinary rehabilitation program among women treated for breast cancer.
Materials and methods.– Thirty patients were recruited, sixteen in the control group and fourteen in the treated group. This group has benefited from a rehabilitation of three months including a supervised training and various psycho-educational sessions. The assessments, performed before and after the program, included anthropometric and body composition measurements, a functional assessment and various questionnaires.
Results.– After three months, the health state (quality of life), emotional state, physical, cognitive and social functions and the symptoms of insomnia and anxiety significantly improve in the treated group. This observation also applies to the flexibility, maximal aerobic power/body weight, time to exhaustion during the physical effort test and walking distance in six minutes. In the control group, these improvements do not appear.
Discussion.– This preliminary study demonstrates the feasibility and benefits of a multidisciplinary approach in women after their treatments for breast cancer.

http://dx.doi.org/10.1016/j.rehab.2014.03.1353

CO67-004-e

Incidence and severity of lymphedema after breast cancer surgery

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Keywords: Lymphedema; Breast cancer; Incidence
Introduction.– The estimate of the incidence of lymphedema in breast cancer patients varies from 11 to 65% according the outcome definition, assessment methods and follow-up. Moreover, there is little information on its severity at diagnosis.
Material and methods.– Survival analysis of breast cancer patients surgically treated between 2005 and 2009. Patients were examined at 1, 6 and 12 months after surgery and yearly thereafter. Signs and symptoms of lymphedema were systematically explored at each control. Both arms volume was obtained by the truncate cone formula. Lymphedema was classified as mild, moderate and severe (excess of volume < 20%, 20%–40%, and > 40% respectively). Lymphedema of hand and chest wall was also included.
Results.– Three hundred and seventy-one patients were followed a mean of 24.4 months and 124 (33.4%) developed lymphedema. Lymphedema appeared during the first year in 83.4% patients. The probability of lymphedema within 12, 24 and 36 months was 28.7% (95% CI 24.1–34.0%), 34.6% (95% CI 29.5–40.2%) and 38.3% (95% CI 32.8–44.3%), respectively. At diagnosis, lymphedema was mild in 78.5%, moderate in 19.0% and severe in 2.5%. Ninety-six patients (77.4%) needed lymphedema treatment.
Discussion.– The incidence and severity of lymphedema underlines the importance of systematic monitoring of these patients during at least the first year.

http://dx.doi.org/10.1016/j.rehab.2014.03.1354

CO67-005-e

Rehabilitation treatment protocol in patients with lymphedema secondary to breast cancer

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Keywords: Lymphedema; Breast cancer; Rehabilitation
Introduction.– Lymphedema is a common complication in patients with breast cancer. Treatment must be established as soon as possible to avoid complications and pain, minimize risk factors of lymphedema progression, maintenance of limb function and preserve patient' quality of life.
Material and methods.– We performed, together with 38 physicians from 13 different specialties, after weekly meetings, a treatment protocol consisting of: prevention phase: Lymphedema' School. Treatment phase: based on Contention Garments (CG) and Complex Decongestive Physical Therapy (CDT). Has two phases: intensive phase and maintenance phase. Recommended treatment according to stages: lymphedema stage I: CG; stage II–III: CDT. Intensive CDT should be done before lymphedema surgery, and 2 weeks after manual lymph drainage, adding CG during the 4th week.
Results.– We elaborated a Rehabilitation Treatment Protocol for patients with breast cancer and lymphedema.
Discussion.– We thought necessary to elaborate a Rehabilitation Treatment Protocol in order to help physicians manage with this common pathology.
Further reading
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http://dx.doi.org/10.1016/j.rehab.2014.03.1355

CO67-006-e

Reduction of health risk factors through an adapted physical activity program in patients with breast cancer

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Keywords: Adapted physical activity; Breast cancer; Health risk factors; Sedentary
Introduction.– After a breast cancer diagnosis, patients are at high risk of reducing their physical activity (PA) and gaining weight. Both lack of PA and weight gain are known to be negative but modifiable prognostic factors. An observational study of a 3-month adapted PA program was performed to assess its benefits in terms of PA level improvement and reduction of risk factors related to health, during or after cancer treatments.
Methods.– Anthropometrics were measured at the beginning and the end of the program. PA profile, aerobic capacity and usual average daily energy expenditure were estimated using the PAQAP© questionnaire. Median values were compared using non-parametric tests.
Results.– Sixty-one (61) voluntary breast cancer patients attended 80% of the sessions. At baseline, median (minimum–maximum) body mass index was 23.3 (16.1–36.8) $kg.m^{-2}$. Waist circumference and waist circumference to height ratio showed metabolic risks. After 3 months, anthropometrics remained stable. Moderate PA significantly improved (+13 min/day) and sedentary tended to decrease (-18 min/day).
Discussion.– A 3-month adapted PA program allows patients with breast cancer to limit nutritional risk factors associated with negative prognosis. This study reinforces the need to promote PA as early as possible in breast cancer patients' care.

http://dx.doi.org/10.1016/j.rehab.2014.03.1356

CO67-007-e

Musculoskeletal sequelae of solid tumours and cancer rehabilitation of children treated with intensive chemotherapie, surgery and radiation therapy

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Keywords: Childhood cancer; Long-term survivors; Cancer rehabilitation
Introduction.– Advances in diagnosis and treatment of childhood cancer have dramatically increased long-term survival and it is now evident that the disease and its treatment can significantly impair long-term health.
Material and methods.– Seventy-one patients at the mean age of 14,5 years with solid tumours were treated between 1987 and 2011 years, follow-up of 2 to 26 years. Eighteen patients had metastases, 11 patients had solitary metastases, 8 – multiple. Treatment consisted of chemotherapy, radiotherapy, oncologic surgery, included limb-sparing procedures. The most common late effects we had observed were: scoliosis—in 63 cases, muscular hypoplasia—53, osteopenia—39, limb-length discrepancy in spite of usage of growing endoprosthesis—38, deformation of chest wall and limbs—23, pathological fractures—3, poor joint movement—40, neurological disturbance—15, lymphedema—5, deforming osteoarthrosis—in 2 cases. Sixteen patients had more, than 6 late effects. Twenty-one patients underwent individual combined rehabilitation program.
Results.– Long-term survival is possible, even for patients with metastatic disease. All long-term survivors of childhood cancer should attend a specialized therapy in rehabilitation clinic.
Discussion.– We suggest that the usage an individual rehabilitation program can enhance physical fitness and dramatically increase the quality of life.

http://dx.doi.org/10.1016/j.rehab.2014.03.1357

CO67-008-e

Effects of an adapted physical activity program with a playful pedagogy in a service of paediatric oncology