AUSTRIAN EXPERIENCE IN REHABILITATION CANCER REHABILITATION

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In 2004, 36.923 people were diagnosed with malignant neoplasms in Austria. There were 9.5% more than ten years ago (33.706 new cases). New cases in men increased by 1.1% from 2003 to 2004, and growth of 18.9% was recorded for the period from 1994 to 2004. For women, there was an increase of 1.0% over 2003 and an increase of 0.6% over 1994.

Since 1994, the most common cancer for men has been prostate cancer, with 91.1 cases per 100.000 (5.416 cases in absolute terms) in 2004. The most common cancer site in women continues to be the breast.

The stage at diagnosis of cancer is an important factor in the prognosis of a cancer and is therefore recorded as far as possible for all cancer incidences. In 2004, approximately a third of all cancers were diagnosed while the cancer was still limited to the particular organ (localised cancer stage: 32.4%). A fifth of diagnoses were only made after the cancer had spread to other parts of the body (regional lymph node metastases, regionalised cancer stage: 19.9%). Distant metastases were discovered in a further 10.8% of diagnoses (disseminated cancer stage).

A total of 74.295 people died in Austria in 2006. Malignant neoplasms are responsible for more than a quarter of all deaths (28.5%).

Once cancer is diagnosed and treated, the patient's life is necessarily and permanently altered.

Many cancer survivors will experience physical and psychological sequelaes that affect their everyday lives. Studies demonstrate the important findings that treatments of localised cancer have consequences that continue to wield or impact patients even for years after therapy is completed.

Some types of cancer can cause multiple impairments. Common functional impairments include loss of motor control, cranial nerve deficits, cognitive and speech problems, swallowing and feeding problems, and sensory loss. Similarly, spinal cord tumors, primary or metastatic, can cause neurological dysfunction including motor, sensory, and bowel and bladder impairment similar to traumatic spinal cord injury. Other cancers are more localized in their impact, for instance, head and neck cancers, which can cause difficulties with speech or swallowing.

Rehabilitation problems can be identified by the organ system involved which is skeletal, vascular, lymphatic, respiratory, neuromuscular, skin, head and neck. Within each system specific problems can be isolated. Problems can be viewed from functional perspectives as impaired communication, impaired respiratory function, pain problems, cosmesis, restricted activity of daily life, ambulation, mobility and transfer.

Rehabilitation for patients with cancer is not different from that in other areas of rehabilitation except that the rehabilitation team must be familiar with the various types of tumors and their behaviour. Important information about malignancies includes their appearance, their ways of spread, and available methods of treatment, such as surgery, radiation therapy, chemotherapy. hormone treatment and immunotherapy. Also, a rehabilitation specialist must know the disabilities and complications these treatments can produce, how to avoid them, and how to treat them.

Tissue loss from the tumor and its treatment is not the cancer patient's only problem. Many of the chemotherapeutic treatments result in loss of appetite, loss of a sense of well-being, nausea, vomiting, loss of libido, and partial or complete loss of hair. Among the many other long-term side effects of chemotherapy is sometimes the development of a second and different type of malignancy. Because these side effects are foreseeable, every effort should be made to lessen the patient's anxiety about them and to reassure the patient concerning their temporary nature (when this is the case).

Because of the different types of problems that can result from cancer, rehabilitation efforts are now evolving along multiple fronts including not only multidisciplinary institutional rehabilitation settings, but also acute care, subacute rehabilitation, outpatient rehabilitation and home care. Again, due to the potential for disease progression, successful outcomes depend upon timely recognition of functional problems and prompt referral for rehabilitation.

In Austria the Medical University Vienna is one of the leading hospitals in cancer research, teaching and taking care of the patient. Rehabilitation plays an important role in improving activity, participation and quality of life of these patients. The Department of Physical Medicine and Rehabilitation in the General Hospital Vienna is consultant for all patients requiring physical medicine and rehabilitation (about 2.000 beds). It is organised in specialised teams of physiatrists, physiotherapists, occupational therapists and massage therapists.

Cancer rehabilitation starts in the hospital and is continued in the Department of Physical Medicine and Rehabilitation for outpatients after discharge. The physiatrists are responsible for the whole rehabilitation process which is adapted to the individual needs of the patients and includes all diagnostic and therapeutic possibilities of the department.

GENERAL SYMPTOMS

Deconditioning

Because patients with cancer will often undergo multiple medical interventions and prolonged or repeated hospitalizations, they are vulnerable to an overall decrease in activity. Also referred to as the inactivity/disuse syndrome or the immobility syndrome, deconditioning is the term used to describe the reduced functional capacity of bodily systems and it is considered a separate entity from the condition that led to the inactivity in the first place. For example, the earliest and most frequent result of immobility/inactivity usually occurs in the musculoskeletal system. Contractures and limitations in range of motion can result in joints that are immobilized in a faulty position. Since muscles at complete rest lose strength rapidly, generalized weakness has been identified as the second most common functional problem in patients with cancer. Early intervention can prevent problems, as it is much easier to maintain strength and range of motion than to regain it.

Fatigue

Most cancer patients experience a loss of energy, fatigue and an impairment of physical performance. This problem affects up to 70% of cancer patients during adjuvant chemo- and radiotherapy or after surgery. For many patients fatigue is a severe and activity-limiting symptom that reduces their quality of life.

Low physical performance imposes limitations on basic activities of daily life. For patients with incurable advanced malignancy, the prognosis and clinical course is profoundly influenced by the site of the primary tumour and the availability of palliative treatment strategies. Nevertheless patients suffering from advanced cancer urgently need treatment strategies that will increase their physical performance and health-related quality of life for the rest of their lives.

Aerobic exercise improves a wide range of biopsychosocial outcomes in non-metastatic cancer patients. It has proven beneficial effects on physical performance quality of life and moods of cancer patients receiving adjuvant treatment, and is also postulated to have positive effects on immunological parameters.

SPECIFIC PROBLEMS

Breast cancer

Breast cancer is the most common female malignancy. The vast majority of patients presenting with breast cancer will undergo surgical resection (whether this is mastectomy or breast conservation surgery), with this procedure, usually, combined with at least axillary node biopsy or a formal axillary lymph node dissection.

The restricted arm motion is one of the most common complications in the breast cancer patients. Early rehabilitation plays an important role in preserving function and returning the patient to her previous level of activity. Specifically designed exercise programs aim to preserve function of the shoulder.

One of the complications of breast cancer treatment is lymphedema of the ipsilateral arm. Lymphedema is defined as a swelling of the arm caused by insufficient lymph drainage. It may result in cosmetic deformity, loss of functional ability, physical discomfort, recurrent episodes of erysipelas and psychological distress. The incidence of lymphedema after treatment for breast cancer ranges between 6 % and 38 %, depending on the extent of axillary surgery and the use of radiotherapy. Lymphedema can be divided into 3 stages. During the first "reversible" stage a protein-rich edema is present. Stage 2, designated as "spontaneously irreversible", presents fibrosclerotic alterations and an increase in the number of ceratinocytes and connective tissue cells. Stage 3, "elephantiasis", is characterized by massive hyperkeratosis and by a tremendous increase in the volume of the limb. Lymphedema may arise immediately after treatment or show up after several years.
Decongestive lymphatic therapy (DLT) can be effective in reducing lymphedema. DLT is a combination of intensive treatment using compression by bandages, manual lymphatic drainage (MLD), exercises enhancing the lymphatic flow, and skin care. This usually is followed by daily use of compression garment exercises, and skin care. Intensive treatment is mainly used for severely swollen or misshapen limbs, where an elastic garment cannot be fitted. MLD is a gentle massage technique, which stimulates the lymphangiomo-

toric activity. This directs the lymphatic flow away from the edematous part of the trunk and arm and thereby decreases the edema and fibrous changes in the arm. MLD is a part of DLT and should be adjusted to the individual patient, but MLD alone has been found inadequate. The main constituent of DLT is compression by elastic sleeves. The patient's own contribution includes skin care, exercises and if necessary in combination with MLD. The intensity of application of the individual components of DLT depends on the stage of lymphedema at the time of treatment starts.

Uncomplicated cases of lymphedema can be treated in an outpatient setting. In studies using DLT it was found that the most important reduction of the edema was obtained in the first week. During the second week, the results obtained were stabilized. In our experience, women treated for breast cancer with an uncomplicated edema in stage 1 or 2 have a notable reduction effect with a standard therapy consisting of daily use of compression sleeves, exercises, skin care and precautions. Compliance is essential in maintaining subsequent lymphedema reduction following conservative therapy.

A significant proportion of women suffer disturbances in body image and self concept. Social isolation and disruptions in family and sexual relationships are related to fears of recurrence and death. Attention to these psychological issues in rehabilitation promote the quality of life, but also improve compliance to treatment and reduce utilisation of health care in the long term.

Prostate cancer

Prostate cancer is one of the most common forms of cancer diagnosed in older men. Impaired physical performance, psychological distress, fatigue, weight gain, urinary incontinence, sexual dysfunction, and changes in male body image are long-term consequences of prostate cancer. To improve participation in the activities of daily living strengthening and endurance exercise should be performed. In cases of bladder or bowel involvement special training and information programs help the patients. Pelvic-floor re-education should be considered as a first-line option in curing incontinence after radical prostatectomy.

Although cancer control is always of primary importance, potency is often a consideration of great concern to patients when deciding between the various treatment options for clinically localized prostate cancer. Preoperative counseling informs the patient that erectile dysfunction can be successfully managed in most cases with therapy tailored to the goals and expectations of both the patient and the partner. Sexual rehabilitation should be addressed by the primary care team. Ejaculatory dysfunction is difficult to handle with. The management of erectile dysfunction includes the application of topical intraurethral therapies, oral medication, vacuum-assisted devices, intracavernosal injection therapy and penile prosthesis. In conclusion sexual rehabilitation is a vital component of the overall care of the prostate cancer patient and contributes significantly to the subsequent quality of life.

The detailed listing of problems in cancer rehabilitation may be helpful to clinicians in their interactions with patients. The need for further studies has to be underscored.

Recommended readings:

1. Andersen L, Hojris I, Erlandsen M, Andersen J. Treatment of breast-cancer-related lymphedema with or without manual lymphatic drainage: a randomized study. Acta Oncol 2000; 39(3): 399-405.

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3. Crevenna R, Schmidinger M, Keilani M, Nuhr M, Nur H, Zöch C, et al. Aerobic exercise as additive palliative treatment for a patient with advanced hepatocellular cancer. Wien Med Wochenschr 2003; 153(9-10): 237-240.

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5. Markes M, Brockow T, Resch KL. Exercises for women receiving adjuvant therapy for breast cancer. Cochrane Database Syst Rev 2006 Oct 18; (4): CD005001 [Review].

6. Taylor K. Morbidity associated with axillary surgery for breast cancer: ANZ J Surg 2004; 74(5): 314–317.