CANCER NUTRITION AND REHABILITATION... IT REALLY DOES

WORK
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The McGill University Nutrition-Rehabilitation Programme

www.mcgill.ca/cnr

McGill Cancer Nutrition - Rehabilitation Program

- Cancer rehabilitation is a process that assists the patient to obtain optimal physical, social, psychological and vocational functioning within the limits created by the disease and its treatment.

Paradigms of Cancer Rehabilitation

Dietz (1981):
- Preventive interventions
- Restorative interventions
- Supportive interventions
- Palliative interventions
Multidisciplinary Team Approach

- Addresses the rehabilitation needs of the patient from the time of diagnosis.
- Team members may include:
  - Physician
  - Rehabilitation oncology nurse
  - Psychologist
  - Physical therapist
  - Social worker
  - Psychologist, psychiatrist
  - Occupational therapist
  - Vocational therapist
  - Chaplain
  - Volunteers

Historical Bases of Cancer Rehabilitation and Survivorship

- 1971: United States National Cancer Act
- 1972: National Cancer Rehabilitation Planning Conference - NCI sponsored

1972 National Cancer Rehabilitation Planning Conference - NCI sponsored

- Psychosocial support
- Optimization of physical functioning
- Vocational counseling
- Optimization of social functioning
McGill Cancer Nutrition – Rehabilitation Program (CNRP)

- Organizational Structure
  - McGill Department of Oncology
  - Division of Palliative Medicine
  - Departments of Medicine and Oncology MUHC

- Origin 2005 with clinics at the Sir Mortimer B Davis Jewish General Hospital and Department of Medicine MUHC
- 2006 Cancer Rehabilitation Program RVH

CANCER REHAB TEAM

- Physician
- Nurse
- Psychologist
- Physiotherapist
- Occupational Therapist
- Dietitian
- Nurse Educator
- Medical Secretary

Role of the Dietitian

- complete a thorough nutrition assessment
- design a nutrition care plan tailored to the patient’s needs
- provide counseling and information on optimizing food intake
- provide counseling on symptom control such as nausea, vomiting, diarrhea, etc.
- ensure adequate food intake to optimize function and quality of life
American Society of Parenteral and Enteral Nutrition recommends that all patients undergo nutritional screening as a component of their initial assessment.

Nutritional Status is important:
- Predicts the risk associated with treatment
- Predicts response to treatment
- Predicts survival and Quality of Life


Paula Ravasco, Isabel Monteiro-Grillo, Pedro Marques Vidal et al.

*JCO* 23:1431-1438
March 1 2005

111 colorectal patients
45 stage I/II
66 Stage III/IV
- 37 = dietary counseling on regular foods
- 37 = protein supplements (2 cans/day)
- 37 = ad libitum intake
Evaluation

- Nutritional Intake (diet history)
  - 24 hour food recall questionnaire
- Anthropometric Data
- PGSGA
- QoL (EORTC - QLQ - C30)

At end of RT

- Group 1: Energy intake increase of 558 kcal/d (398 - 788), p = 0.002
- Group 2: Energy intake increase of 296 kcal/d (286 - 401), p = 0.04
- Group 3: Energy intake decreased, 285 kcal/d (201 - 398), p < 0.1

  Group 1 > Group 2 (p < 0.001)

Baseline

- 15 malnourished in Group 1
- 14 malnourished in Group 2
- 13 malnourished in Group 3

- At 3 month
  - Additional nutritional degeneration in G 2 and G 3 relative to G 1 (p < 0.001)

Quality of Life

At 3 months

- G1 patients maintained or improved QoL (p < 0.02)
- G2 patients maintained or worsened QoL (p < 0.01)
- G3 patients deteriorated (p < 0.004)
Role of Physiotherapist

- Complete a thorough physical assessment taking into consideration lifestyle, work habits, etc.
- Develop an individualized treatment plan tailored to the patient's needs in order to prevent muscle wasting, maintain cardiovascular stamina and to promote functional independence.
- Provide patient with a home program to maximize results.
- Educate patient on importance of exercise and activity to optimize function and quality of life.

Physical Activity and Survival after breast cancer diagnosis

- Holmes MD, Chen WY, Feskanich D, Kroenke CH and Colditz GA.

  *JAMA* 2005 May 25; 293(20):2479 - 86.

Nurses’ Health Study

- 121,700 nurses
- 30 — 55 years
Stages I, II or III invasive breast cancer diagnosed between 1984 – 1998
Followed until death or June 2002

- **MET** = metabolic equivalent task
- **1 MET** = energy expenditure of sitting quietly
- **MET scores** = the ratio of the metabolic rate of the activity divided by the resting metabolic rate

<table>
<thead>
<tr>
<th>MET - Hours of Activities Surveyed</th>
<th>MET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leisure Time Activity</td>
<td></td>
</tr>
<tr>
<td>Hospital pace walking (1/4 - 1/2 mph)</td>
<td>1.2</td>
</tr>
<tr>
<td>Brisk pace walking (2 to 3.5 mph)</td>
<td>4</td>
</tr>
<tr>
<td>Very brisk pace walking (4 + mph)</td>
<td>4.5</td>
</tr>
<tr>
<td>Jogging (slower than 10 min/mile)</td>
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</tr>
<tr>
<td>Running (faster than 10 min/mile)</td>
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</tr>
<tr>
<td>Bicycling</td>
<td></td>
</tr>
<tr>
<td>Tennis, squash, racquetball</td>
<td>2</td>
</tr>
<tr>
<td>Lap swimming</td>
<td></td>
</tr>
<tr>
<td>Calisthenics, set on wall machine, other aerobic exercise</td>
<td>6</td>
</tr>
<tr>
<td>Yoga, stretching, walking, lower intensity exercise</td>
<td>6</td>
</tr>
<tr>
<td>Other vigorous activities (e.g. running)</td>
<td>6</td>
</tr>
</tbody>
</table>

Abbreviations: MET = metabolic equivalent task, mph = miles per hour

Covariates: extracted from medical records

- Tumour size
- Lymph nodes
- ER/PgR
- Method of treatment
- Interval between breast cancer diagnosis and assessment of physical activity
- Dietary assessment - energy/protein

*Source: binneweg 87, Hulink 90, Leit 91. Comparison of physical activity in breast cancer patients.*
4484 diagnoses – 1497 excluded

- Reasons for exclusion
  1. Recurrence prior to follow up
  2. No report of physical activity after diagnosis
  3. Stage IV at diagnosis or Stage III with no met workup
  4. Missing disease Stage

- 2987 included:
  1. 463 deaths – 283 from breast cancer
  2. Follow up = 96 months

- Women who were more active:
  1. Had lower BMI
  2. Consumed more protein
  3. Less likely to gain weight

- Each category of activity above reference (<3 MET hours per week) was associated with a decreased risk of adverse event
Multivariable relative risk of death from breast cancer =

- 0.8 (95% CI: 0.6 - 1.06) for 3 - 8.9 MET hrs/week
- 0.5 (95% CI: 0.31 - 0.82) for 9 - 14.9 MET hrs/week
- 0.56 (95% CI: 0.38 - 0.84) for 15 - 23.9 MET hrs/week
- 0.6 (95% CI: 0.4 - 0.89) for 24 or more MET hrs/week

- Using 9 MET hours/week as cutoff, the RR of death for women = 0.63 (95% CI: 0.48 - 0.81)

5 Year Survival

- 97% > 9
- 97% 3 - 8.9
- 93% < 3

10 Year Survival

- 92%
- 89%
- 86%
Infirmière Pivot

1. Contacts all patients referred to the Program.
2. Provides appropriate referrals.
3. Provides a means for contact of the team with the patient/family/caregiver.
4. Provides nursing assessment and interventions.
5. Provides psychosocial and survivorship information.

Psychologist

- Assessment: the level of distress and coping.
- Motivation and compliance.
- Assist in adjustment to illness e.g., anxiety.
- Grief and bereavement.
- Group Therapy.
- Staff support.
- Collaboration and referral.
- Research.

Designed for Cancer Patients who:

- Have a decreased appetite.
- Are experiencing weight loss.
- Are experiencing fatigue.
- Are experiencing loss of function.
- Provides information, treatment, and support on individual and group basis.
Criteria for Accepting Patients

- Patients with a diagnosis of cancer having problems functioning in a physical, social, psychological or vocational area
- PG-SGA > 3 with obvious dysfunction according to ESAS and BPI Distress Thermometer > 5
- Geographically accessible

Referrals from:

- MD's: Oncologists, Surgeons, Palliative Care
- Tumour Boards
- Interim Referral and other nurses
- Physio, Dieticians and other medical disciplines

THE TREATING PHYSICIAN REMAINS RESPONSIBLE

Use of Patient Generated Subjective Global Assessment Tool
January - September 2006

- 114 new patient referrals
- Age Range: 18.84 yrs
- Diagnoses: Breast - 15
  Gastro/Eosophageal - 35
  Pancreatic - 10
  Colorectal - 8
  Lung - 12
  Gynecological - 8
  Hematological - 11
  Other - 25

65 New Pt Evaluations

29 - Full Program 8 Weeks
Physiotherapy visits twice a week in groups and regular follow up by nutritionist, nurse, physician and psychologist over an 8 week period. Also, participation in the group education and support sessions once a week (voluntary).

56 Participating

23 did not complete the 8 week program
10 Died - 8 Individual and 2 group program
13 Dropped out - 3 Too ill; 10 due to freq of visits
5 Referred to CHIP Pilot project

27 Individual Program
For patients unable to come as freq seen by physiotherapist at least once post their initial evaluation and given a home exercise program. Individualized follow up by nutritionist, nurse, physician and psychologist. The majority of the individual program patients have not participated in the group education and support sessions.

3 Patients on hold
Research

- Electrogastrogram (EGG) with Ghrelin Measure
- Expanding the Role of Preoperative Rehabilitation: The impact of a multidisciplinary program to optimize nutritional reserve and exercise capacity on post-operative complications after thoracic surgery
- The use of IHC in cancer patients with chemosensory abnormalities
- Platform for future research for nursing/physiotherapists and others
- Rehabilitation for patients undergoing bone marrow transplantation

EGG Procedure
Vispace Electrogastrogram Analyzer

1. Baseline (10 min)
2. Water load
3. Test (30 min)