Specialized Physical and Occupational Therapy Programs in the Acute Care Setting

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Objectives

• Identify PT/OT program development needs in the acute care oncology population.
• Describe unique MSKCC PT/OT programs that have been developed to improve the quality of patient care.
• Discuss the implementation of these unique programs to meet the needs of patients with cancer.

Adult Allogeneic Bone Marrow Transplant (BMT) Rehabilitation Program
Allogeneic BMT Program
Overview
• Established 2009
• Rationale – Prevent decline, restore or maintain function in patients undergoing allogeneic BMT
• Traditional Care – “General Rehabilitation”
• Allo BMT Program – Identify and address specific needs affecting function of patients undergoing allogeneic BMT

Allogeneic BMT Program
Background
• Hematopoietic stem cells – Lymphoid, myeloid, megakaryocyte, erythroid precursors; self renewing; found in bone marrow, peripheral blood, umbilical cord
• Hematopoietic stem cells vs. Bone marrow transplant
• Allogeneic vs. Autologous BMT
• Allogeneic BMT and hematologic cancers

Allogeneic BMT Program
Principles
• Conditioning – high dose chemotherapy, total body irradiation (TBI)
• Graft vs. tumor effect
• Complications – Acute vs. chronic
• 2003. Mello et al.
• 2008. Wiskemann J
Allogeneic BMT Program

Timeline

Nausea
Fatigue
Vomiting
Bleeding
Acute GVHD
Diarrhea

Neutropenia
Anemia
Thrombocytopenia
Neuropathy
Infections: CMV, VZV, PCP
Chronic GVHD – day +100

Neuro...a...y

Conditioning Transplantation

Approximate Days +/- Transplant

10 5 0 10 20 35
Conditioning Transplantation Engraftment Discharge – Follow up

Allogeneic BMT Program
Rehabilitation

Preadmission:
Exercise Activity Posture Fall prevention Baseline cognition

Admission: Automatic referral IE/RE at 4 wks 1 – 2/wk PT/OT Education Exercise levels

Cognitive activities Weekly activity logs Weekly tests Volunteers as coach D/C recommendations Follow up

10 5 0 10 20 35
Conditioning Transplantation Engraftment Discharge – Follow up

Allogeneic BMT Program
Rehabilitation

• Assessments – PT/OT, sit to stand, 6 minute walk, BFI, single limb stance, MOCA, COPM
• Interventions – strengthening, posture, balance, endurance, gait training, BADL, cognition
• Exercise levels – graded exercise
• Cognitive activities – restorative and compensatory strategies
• Goals – maintain and restore physical and cognitive function

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Allogeneic BMT Program Rehabilitation

- Barriers – clinical, “rest” culture, buy-in
- Successes – clinical, culture change
- Future directions – technology, coaching, follow up, continuity of care into outpatient

Post-Operative Pulmonary Program (POPP)

Background

- Established 2005
- Initial rollout – thoracic surgery
- Followed by gynecology, urology, colon/ hepatopancreatobiliary and head/neck
- Rationale – prevent pulmonary complications and restore function post-operatively
- Traditional – Chest PT and Rehab
Post-Operative Pulmonary Program

Background

• Automatic referrals to PT/RT - post-op day #1
• Criteria – surgical procedure, over 70 years old, morbid obesity, COPD, poor mobility
• Components
  – PT/RT collaboration
  – PT outcomes measures (6-minute walk test)
  – Surgery specific considerations
  – Patient education
  – Patient ambulation tracking
  – Pulmonary hygiene and function

Thoracic – VATS, wedge resection, lobectomy, pneumonectomy, esophagectomy, complex airway

Gynecologic – hysterectomy, total abdominal hysterectomy, open trachelectomy, pelvic exenteration, bilateral salpingo-oophorectomy

Urologic – cystectomy, nephrectomy, retroperitoneal lymph node dissection

Head and neck – maxillectomy, facial/neck tumor resection, neck dissection, mandibullectomy, laryngopharyngectomy glossectomy

Colon/ hepatopancreatobiliary – whipple, hepatectomy, pancreatotectomy, colectomy etc.
Post-Operative Pulmonary Program Rehabilitation

- PT assessment – sit to stand, 6 minute walk
- Interventions – chest PT, pulmonary hygiene, patient education, therapeutic exercises, gait training
- Surgery specific considerations
- Referral for OT – BADL/IADL training
- Goals – independent CPT and HEP, prevent complications, improve function, increase ambulation

MSKCC Lymphedema / Edema Service

Overview of Program Need

- Lymphedema services were not consistently available for patients in the acute care setting.
- A need for incorporating Complete Decongestive Therapy (CDT) in treatment plans became evident.
- Improved continuum of care was needed to
  - Bridge the gap for patients receiving outpatient lymphedema care
  - Improve post-op care for patients with lymphedema and at-risk for developing lymphedema
How the Program was Established

PTs and OTs in the department elected to become certified Lymphedema Therapists (CLT).

An inpatient Lymphedema Referral was created for medical/surgical teams to request lymphedema services.

Extensive EDUCATION was provided to referring medical teams.
- Benefits of lymphedema therapy
- How to appropriately refer patients

Inpatient Lymphedema Team

- An inpatient lymphedema team was created to standardize treatment through:
  - Utilization of techniques in a multi-dimensional way to modify lymphedema contraindications.
  - Creation of guidelines for providing treatment for patients with non-specific edema.
  - Development of staff competencies for newly certified therapists.
  - Provision of extensive staff education
    - Edema limits a patient’s medical treatment, healing, and functional mobility.

How the Program Functions
Operational - Referral Process

- Lymphedema/edema therapy requires a medical referral
  - Inpatient lymphedema/edema therapy
  - Lower extremity lymphedema prevention group
- Patients referred for lymphedema/edema therapy are evaluated within 48 business hours
- Patients referred for the Lower Extremity Lymphedema Prevention Group are seen within 24-48 business hours

Multi-Factorial Edema

- Decreased functional participation?
- Extensive surgery?
- Low albumin?
- Non-specific edema

Assist with goals of care and edema reduction using appropriate CDT techniques
Increase function & decrease discomfort

Considerations When Establishing a Lymphedema Program in an Oncology Setting

- Standard lymphedema precautions and contraindications do not always apply
- Hematologic, renal and cardiac functions are not necessarily considered contraindications for bandaging in this population
- Clinicians will use clinical judgment on a case by case basis and develop a close working relationship with the referring physician/primary team
Lower Extremity Lymphedema Prevention Group

Fluid is Made Constantly Throughout the Entire Body

Patient Education – Edema vs. Lymphedema

- Edema is resolved with elevation
- Edema is mostly water
- Edema fluctuates with different activities
- Short-term issue

- Lymphedema sometimes resolves with elevation
- Lymph is protein rich fluid
- Lymphedema needs to be managed daily
- Life-long management issue

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Patient Education

- Precautions
  - Avoid infection
  - Avoid blunt trauma
  - Do not walk barefoot
  - Avoid constriction/restricting clothing or jewelry
  - Avoid extreme temperatures
- Guidelines for exercise after surgery
  - Progress slowly
  - Avoid muscle strains
  - Slowly work towards prior level of fitness
  - Know your limits
  - Use common sense

MSKCC Occupational Therapy
Neurocognitive Evaluation

Overview of Program Need

- OT referrals were inconsistently placed for patients following neurosurgery
- Neurosurgery patients often presented with post-op cognitive and functional deficits when evaluated by OT
- Benefits of referring all neurosurgery patients for OT:
  - Improved identification of cognitive and safety awareness deficits
  - More efficient discharge planning
OT Neurocognitive Evaluation Goals

- Effectively assess each patient's level of physical and cognitive function following neurosurgery
- Create realistic short and long term rehabilitation goals with patients and families to meet basic self care needs
- Collaborate with the interdisciplinary team and provide appropriate/safe discharge recommendations for all patients

How the Program was Established

A need for immediate post-operative OT services for all neurosurgery patients was identified.

A comprehensive OT neurocognitive evaluation was developed and piloted with all neurosurgery patients.

Education was provided to referring MDs/NPs so that all neurosurgery patients received OT post-op.

How the Program Functions
Operations - Referral Process

• Automatic OT referral for BADL and/or cognitive assessment
• Patients are referred for an OT Neurocognitive evaluation post-op day #1
• Patients are evaluated by OT within 48 business hours

OT Neurocognitive Evaluation

• Visual Perception
  – Neglect
  – Figure-ground discrimination
  – Right/left discrimination
  – Body scheme
  – Object recognition
• Language
  – Naming, word finding
  – Comprehension
  – Aphasia
  – Perseveration
• Vision
  – Tracking
  – Convergence
  – Scanning
  – Peripheral vision
• Money Management
  – Calculation
  – Money identification
  – Check completion
• Safety
  – General safety awareness
  – Judgment (impulse control)
  – Problem solving skills
  – Functional safety awareness
  – Responses to emergency situations
• Standard Measures
  – Mini-Mental State Exam (MMSE)
  – Montreal Cognitive Assessment (MOCA)

Frequently Used OT Interventions with Neurosurgery Patients

BADL Training
Cognitive Retraining
Therapeutic Exercise
### Comprehensive OT Treatment

**BADL**
- Sequencing basic self care activities and functional transfers.
- Use of adaptive devices to safely participate in self care activities.

**IADL**
- Drink preparation and accessing items in the unit pantry.
- Safety/emergency maintenance: determining appropriate responses to emergency situations.

**Cognitive Interventions**
- Finding phone numbers in a directory or on the internet.
- Scanning the hospital gift shop and calculating exact change.

**Education**
- Home modifications and equipment recommendations for discharge.
- Appropriate referrals to social work, psychiatry or community resources.

### Occupational Therapy Cognitive Group

- 2-4 patients/group
- Group leader facilitates discussion and guides cognitive activities
- Encourage sharing and group interaction throughout activities
- Maintain a supportive environment to promote social skills and positive communication
- Limitation: difficult to coordinate and gather patients with similar cognitive deficits

### In Summary

- The MSKCC Rehabilitation Service has developed several programs to improve the quality of rehabilitation services provided to inpatients
- Our program development has addressed the comprehensive functional and cognitive needs of our patients
- Through collaboration and consistent education with other disciplines, we have promoted PT/OT services within our institution
Resources


Questions?