

Basic Oncology for the Physical Therapist

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Cancer....2nd most common cause of death: United States

- Uncontrolled growth and spread of abnormal cells. If not controlled can result in death.
- Over 8 million Americans alive today have a history of cancer.
- About 547,000 people will die/year of CANCER.
- About 500,000 (4 of 10) people diagnosed with cancer will be alive 5 years.

Cell disorders

- Hyperplasia
- Dysplasia
- Metaplasia
- Anaplasia

Tumor Nomenclature

- Anatomic site of primary tumor (Lung, colon, breast).
- Classification of the tissue of origin (Epithelium, connective tissue)
- Degree of cell anaplasia (Benign or malignant)
- Extent of tumor progression (Degree of invasion or metastasis)

Carcinoma

- Develops in the lining and covering tissues of organs

Sarcoma

- Develops in connective and supporting tissue of the body.
Bone cancers are classified as sarcomas.

Myeloma

- Cancer of protein producing plasma cells of bone marrow.

Lymphoma

- Originates in the lymph system, which protects the body from infection, can vital organs. Two major divisions:
- Hodgkin Disease
- Non-Hodgkin

Leukemia

- Progressive disease of blood forming tissue within the bone marrow.
- Types:
 - Acute myeloblastic (AML)
 - Acute lymphoblastic (ALL)
 - Acute monoblastic
 - Chronic myelocytic (CML)
 - Chronic lymphocytic (CLL)

Cancer

- Primary: Initial onset of disease; Localized tumor; Isolated to single body part or organ.
- Metastasis: Regional spread from primary; Forms new foci of disease; Tumor cells adhere to vascular endothelium.
- Systemic: Disease effects body as a whole, carried through lymphatic or vascular system.

Top Ten Cancer Killers (Males)

- 1. Lung
- 2. Prostate
- 3. Colon/Rectum
- 4. Pancreas
- 5. Lymphoma
- 6. Leukemia
- 7. Esophagus
- 8. Liver
- 9. Stomach
- 10. Bladder

Basic Date: ACS Report

Top Ten Cancer Killers (Females)

- 1. Lung
- 2. Breast
- 3. Colon/Rectum
- 4. Ovary
- 5. Pancreas
- 6. Lymphoma
- 7. Uterus (Endometrial and Cervical)
- 8. Leukemia
- 9. Liver
- 10. Brain

7 Warning Signs of Cancer

- **C** change in bowel or bladder habits
- **A** a sore that does not heal
- **U** unusual bleeding or discharge
- **T** thickening or lump in breast or elsewhere
- **I** indigestion or difficulty swallowing
- **O** obvious change in wart or mole
- **N** nagging cough or hoarseness

Warning Signs & Symptoms

- *Bone Cancer*-Fatigue and discomfort; Weight loss; Swelling; Soft mass; Limited ROM; Fever.
- *Breast Cancer*-Breast discharge or bleeding; Change in shape of breast or nipple; Tender lymph nodes; Skin dimpling; Noted rash or veins of the breast.
- *CNS Cancer*-Loss of focus; Fatigue; Poor judgement; Headaches; Pain; Seizures; Neurological changes.
- *Leukemia*-Unusual bleeding; Dyspnea; Bruising; Fatigue; Weight loss; Chills and fever.
- *Lung Cancer*-Coughing blood; Dyspnea; Chills and fever; Weight problems; Breath odor; Heart palpitations; Muscle weakness.
- *Multiple Myeloma*-Hypercalcemia; Dehydration; Polyuria; Bone fractures; Carpal tunnel.
- *Soft Tissue Tumor*-Local swelling; Tenderness; Skin warmth.

Pathologic Staging TNM

- T-Tumor
- N-Lymph Node
- M-Distal

Metastasis

- T1..0-2cm
- T2..2-5cm
- T3..>5cm
- T4..ulceration
- M0..None M1.. +
- T1 T2 T3 T4
- N0 N1 N2 N3 N4
- M0 M+
- N0..Negative
- N1..Positive
- N2..Large
- N3..Near clavicle*

*American Joint Committee on Cancer

Chemotherapy Agents

- ALKYLATING: Damage DNA in nucleus which has decreased ability to repair.
- ANTIMETABOLITES: Replace compounds needed for DNA synthesis.

Agents

- INHIBITORS OF CELL: Inhibits at cell myotasis, so dividing cells cannot separate chromosomes into daughter cells
- ANTITUMOR ANTIBIOTICS: Bind DNA and block RNA preventing protein growth.

Chemotherapy Failure

- Agent does not reach toxic state
- Insufficient delivery through bloodstream
- Not on cell cycle
- Low drug concentration

Chemo: Notify MD

- A fever greater 100°.
- Bleeding or unexpected bruising.
- A rash or allergic reaction (swelling).
- Chills.
- Pain/Sore at chemo injection site.
- Unusual pain (Headache).
- SOB
- Diarrhea or prolonged vomit.
- Blood in urine.

External Beam Radiation

- A machine (Linear accelerator) that directs high-energy rays or particles to the cancer and margins of normal tissue.

Internal Beam Radiation

- Radioactive substance is sealed in small containers, such as wires and tubes then placed directly into tumor or body cavity.
- Intracavitary
- Brachytherapy

Success

- Depends on whether cells multiply between fractions. Too much time between fractions increases doubling time.

- Intervals should be short to kill greatest number of Ca cells.
- Schedule usually 5 days/week for 5-8 weeks or more (Prevents to much RAD to skin and normal tissue).
- Split Course Therapy allows patient several weeks off in middle of treatment to allow body recovery time.

Radiation Problem

- Radiation may cause disease that is being treated.
- Most common is leukemia showing up 10 years after treatment.
- Thyroid cancer, breast cancer, and sarcomas may show up 15 years later.
- Younger the treatment better chance of second cancer.
- Not treating greater problem than risk of second cancer.

Surgical Intervention

- Types of surgery
- Patient known to be at high risk.
- Biopsy to obtain tissue.
- Remove cancerous tissue.
- Relieve pain and restore function for terminal patients (Q and L).
- Correct function and cosmetic defects.

TRAM (Transverse Rectus Abdominal Myocutaneous Flap)

- Breast reconstruction method using autologous tissue.
- Consideration for post mastectomy patients.
- Contraindicated:
 - Chronic pulmonary disease
 - Cardiovascular disease
 - Hypertension
 - Insulin dependent diabetes mellitus
- Risk
 - Smoker
 - Obesity
 - Thin
- Radiotherapy

Head and Neck Cancer Surgical Options

- Radical neck dissection (excised SCM, omohyoid muscle, spinal accessory nerve, lymphatics of the anterior and posterior triangles, the anterior, internal, and external jugular veins as well as the external maxillary anterior).
- Procedure can lead to major disabilities due to decreased nerve innervation to the trapezius.
- Modified radical neck: saves the spinal accessory nerve.
- unctional neck dissection removes the lymphatics only.

Bone marrow transplants

- Bone marrow produces 3 types of cells. Red blood cells = cells that transport oxygen from the lungs to other parts of the body. (To few RBCs called anemia) White blood cells = defense mechanism that fights infection. Platelets = prevention of bleeding by the formation of clots.
- BMT = replacement of diseased or destroyed bone marrow with healthy cells

BMT Problem (1/2 BMT = GVHD)

- Graft versus host disease (GVHD) 16% death rate
- Symptoms: From mild skin rash to severe diarrhea to life threatening liver damage and hemorrhage.

National Marrow Donor Program

- 100 South Robert Street
St. Paul, MN 55107
1-800-654-1247

About 1.5 million volunteers registered

Immunotherapy

- Stimulates the body's own immune system to attack the disease.
- Many patients who have failed other interventions made positive progress with immunotherapy.
- Alter genetic make-up:
 1. By removing cells that could fight cancer
 2. Inserting fighting gene into them then
 3. Infusing cell back into patient.

Hormone Therapy

- Natural or synthetic change of hormones to treat disease.
- 3 methods of treatment
 1. Medication (injected or oral)
 2. Surgical removal of hormone producing gland.
 3. Radiation to destroy hormone cells.
- Treatment plan: Tamoxifen - blocks bodies use of estrogen. Hormones used: adrenocorticoids (prednisone and cortisone), estrogen and progesterone (female hormones), androgen (male hormone).

Side effects: Chemotherapy

- Nausea
- Vomiting
- Loss of appetite
- Menstrual irregularities
- Low blood count
- Hair loss
- Mouth sores
- Conjunctivitis
- Ulcers
- Fatigue
- Heart problems
- Headache
- Pain at IV site
- Numbness
- Dizziness
- Bladder liver problem
- Infertility
- Depression

Specific Examples - Chemo Side Effects

- Cytosan (oral/IV) Nausea, vomiting, loss of appetite, menstrual irregularity, low blood counts, hair loss. Possible urinary bladder problems, liver problems, infertility
- Adriamycin (IV) Hair loss, mouth sores, nausea, vomiting, low blood counts. Possible heart problems, nail and skin darkening, liver problems.
- Vincristine (IV) Hair loss, tingling and numbness in fingers and toes, pain at IV site, constipation, headache. Possible muscle and jaw pain, loss of reflexes, depression, insomnia
- 5 fluorouracil (5FU) Mouth sores, nausea, vomiting, diarrhea, low blood counts, loss of appetite, hair loss, sore throat.

Possible rash, nail change, skin darkening

Side Effects: Radiation

Acute

- Itching/Swelling
- Skin Reddening/Burn
- Fatigue
- Nausea/Vomiting/Loss of appetite
- Decrease counts
- Pain

Long Term

- Fibrosis (Firmness of the Breast)
- Radiation induced 2nd malignancy

Side Effects: Surgery

- Cosmetic and Functional
- Infection
- Psycho-social issues
- Pain
- Decreased function with possible deformity

Side Effects: Bone Marrow Transplant

- Short Term
 - Nausea/Vomiting
 - Irritation of lining of mouth and GI tract
 - Decreased blood counts
 - Damage to vital organs
 - Hair loss
 - Loss of appetite
- Long Term
 - Infertility
 - Early menopause
 - Cataracts
 - Secondary cancers

Side Effects: Immunotherapy

- Interferon toxicity
- Fever/Chills
- Nausea/Vomiting
- Anorexia
- Fatigue
- Monoclonal Antibody Toxicity
- Fever/chills
- Dyspnea
- Hypotension
- Nausea/Vomiting
- Interleukin 2 toxicity
- Fluid retention/pulmonary edema

Side Effects: Hormone Replacement Therapy

- Tamoxifen - hot flashes, nausea, vaginal discharge or itching. Possible headache, bone pain, depression.
- Progestins - weight gain, edema, breast tenderness. Possible carpal tunnel syndrome, hair loss.
- Prednisone - mood changes, increased appetite, fluid retention. Possible ache, muscle weakness, diabetes, high blood pressure.

Role of Physical Therapy

- Help improve quality of life
- Educate public of early detection

- Educate the patient, family, physician, and other health care providers of the need for rehabilitation for the patient diagnosed with cancer
- Follow a safe and functional rehabilitation program with realistic goals for each individual

Make your own niche

- S Search
- U Understand
- C Confidence
- C Challenge
- E Excitement
- S Support
- S Succeed

In order to be successful we must rehabilitate both the patient and the system.

Coping

- Illness
- Changes
- Next holiday could be last
- Medical environment and caregivers
- Self image
- Relations coping with illness
- Future
- If in remission...When will it return?

Support Guide

- American Cancer Society (ACS)
1-800-ACS-2345
- National Cancer Institute (NCI)
1-800-4-CANCER
- Equal Employment Commission
1-800-872-3362
- State Dept. of Vocational Rehab.
- National Coalition for Cancer Survivorship
1-301-650-8868
- National Lymphedema Network
1-800-541-3259
- Job Accommodation
1-800-526-7234

Why cancer pain?

- Biological mechanism
- Bone destruction
- Obstruction
- Infiltration or compression
- Infiltration or distention
- Inflammation, infection and necrosis of tissue.

Management of Cancer Pain

- Evaluation
- Physical and neurological exam
- Differential diagnosis

- Pain history and pattern
- Present and past medication
- X-rays, MRI, CT, EMG lab results
- Nutrition history and interventions
- Functional evaluation

Realistic Goals

- Plan management (cancer/pain/psychological)
- Focus on patient and family

Organ Toxicity and Life Threatening Complications

- Problems seen:
 - Hematologic (dealing with blood and blood forming organs)
 - Obstruction
 - Increased pressure/fluid accumulation
 - Metabolic (dealing with chemical processes of living organisms)
 - Pathologic fractures

Oncology Emergency Signs

- Infection
- Fever
- Ecchymosis
- ?
- Headaches
- Chest Pain
- Dizziness
- Fatigue
- Insomnia
- Swelling
- Local or ? pain
- Neurological deficits
- ?
- Abdominal pain/cramps
- Nausea/vomiting
- Constipation/diarrhea
- Hypertension/hypotension
- Tachycardia
- Changes in urine
- Loss of appetite
- Blurred vision
- Changes in mental state
- ?
- Respiratory changes
- Weight changes
- Depression
- Fractures
- Coma
- ?

Who is going to make the therapy referral?

- General practitioner
- Internist
- Surgeon
- Plastic surgeon
- Oncologist
- Radiation oncologist
- Radiologist
- Psychiatrist

- Pathologist
- Nurse
- Social worker
- Psychologist
- Nutritionist
- Chaplain
- Family member
- Friend
- Patient
- Therapist

Mission Statement

- Through emotional support, education, rehabilitation, and exercise we strive to empower the patient diagnosed with cancer to maintain and improve their quality of life.

Philosophy

- Physical rehabilitation should be synonymous with cancer care—loss of strength and function as well as overall physical fitness must be restored in order to maintain quality of life. Our aim is to assist the patient diagnosed with cancer with maximal education, exercise, and support throughout the treatment and recovery periods. Promotion of wellness allows an individual the opportunity to meet future health challenges.

Rehabilitation Options

- Prevention: Early after diagnosis, to prevent functional loss.
- Restorative: Reach maximal function when physical impairment or disability present.
- Supportive: Increase self care and mobility for the patient with progressive cancer and impairment. Teach energy saving methods.
- Palliative: Comfort and function for those patients diagnosed with terminal conditions.

General Goals

- Prevent deconditioning
- Maximal functional skills
- Prevent or treat cardiopulmonary impairment or dysfunction
- Emotional support to patient and family
- Education of patient of condition
- Treatment and home program
- Assist in pain and symptom control
- Assist in Health promotion

Specific Goals

- Increase strength and endurance
- Decrease nervousness, irritability, and anxiety
- Increase attention span and concentration
- Improve posture
- Maintain or improve ROM and flexibility
- Promote independence (gait/transfer/ADLs)

FIM

- 7 Complete independence (timely, safely) no helper
- 6 modified independence (device) no helper
- Modified dependence helper
- 5 supervision helper
- 4 minimal assist (subject = 75% +) helper
- 3 moderate assist (subject = 50% +) helper

- Complete dependence
- 2 maximal assist (subject = 25% +) helper
- 1 total assist (subject = 0% +) helper
- Admit/Discharge/Follow-up
- Self care/sphincter control/mobility/locomotion/communication/social cognition

Physical Therapy Evaluation

- Range of motion
- Manual muscle testing
- Shoulder assessment
- Sensation testing
- Girth measurements
- Posture analysis
- Cardiovascular fitness
- Body fat analysis

Benefits of Regular Exercise

- Weight loss and decreased body fat
- Lower risk of cardiovascular disease and cancer
- Lowers blood pressure
- Decrease insulin use in diabetics
- Prevents osteoporosis
- Lowers serum cholesterol
- Slows aging of heart and lungs
- Reduces back pain
- Improves self-image

Benefits of Exercise with Cancer

- Increase
- Accumulation of muscle protein
- Joint mobility
- Strength
- Decrease
- Edema
- Pain
- Anxiety
- Depression
- Enhance immune function
- Decrease infection susceptibility

Psychological Benefit

- Increase feeling of well being
- Give patient sense of control
- Improve self-esteem
- Enhances coping
- Increased attention span and concentration
- Decrease anxiety
- Decrease depression
- Increase strength, mobility and fitness

Presurgical Evaluation

- Education of expectations
- Introduction helps decrease anxiety and fear
- Screen patient's condition prior to medical intervention (psychologically, strength, mobility's girth)
- Ability to initiate safe and functional rehabilitation program
- Avoid undue stress on involved extremity

Postsurgical Evaluation

- Completed as soon as possible
- Teach proper elevation for comfort and edema control
- Control upper extremity flexion until drains are removed
- Teach support program
- Full evaluation procedure
- Compare to pre-evaluation

Safe Exercise Program

- Common sense
- MD clearance
- Limit before lab work/infection/fever
- Wait a day
- Start slowly
- Avoid pain
- Caution with low blood counts
- Avoid infections including foot care
- Return to MD with persistent complaints

Contraindications to Exercise

- Unusual fatigue
- Unusual weakness
- Irregular pulse
- Decrease heart rate with work
- Leg pain/cramps
- Nausea, vomiting, or diarrhea
- Disorientation
- Dizziness, blurred vision or faintness
- Pallor or cyanosis
- Dyspnea onset
- IV chemo last 24 hours
- Platelets < 20,000
- White blood count < 1500

The Coleman 10 Step Program

- I Individualism
- II Physical therapy evaluation
- III Ancillary services
- IV Patient education
- V Rehabilitation program
- VI Progress step
- VII Group exercise program
- VIII Follow-up
- IX Out reach program
- X Home maintenance

Research by Winningham

- Exercise may enhance quality of life
- Interval aerobic training (rest and exercise) enhances cardiovascular efficiency, overall functional ability, and reduces incidence rates of nausea from chemotherapy

Research by Seeger

- Regular aerobic cycling decreased depression and anxiety as well as increased self-esteem

Research by Pinto

- Surveyed 72 Stage I and II breast cancer patients. Those who exercised reported less depression and enhanced quality of life compared to the sedentary control group.

Research by Durak

- Health Club Study
- Breast cancer program: Aerobic exercise/PREs on machines 2x/wk for 20 weeks
- Results:
 - Cancer patients showed:
 - 80% increase in upper body strength
 - 31% increase in lower body strength
 - 35% increase in aerobic machines
- Progress ADLs, strength, and endurance
- Decreased pain and decreased nausea

Postsurgical Rehabilitation TRAM

- Immediate Post-up
- Distal hand exercise to assist shoulder stabilization.
- Incisional splinting techniques to increase comfort with movement
- Day 2 or 3
- Reach to opposite shoulder and knee
- ADLs with active range per individual

Postop

- Two to four weeks according to MD
 - Active/Passive ROM to involved shoulder including overhead stretch
 - Gentle resistive exercise
 - Progressive cardiovascular fitness program within safe limitations
- Six weeks depending on patient
 - Aggressive stretching and strengthening of should
 - Strengthening of trunk and abdominals
 - Cardiovascular crosstraining
 - Return to work activities (assimilation)
 - Arm edema maintenance/prevention
 - Scar tissue management (decrease adhesions)
 - Fitness through either medical interventions

Long Term Management

- Maintenance stretching and muscle tone, especially in radiated areas
- Posture management program
- Quality of life fitness program
- Awareness of any problems

Rehabilitation Treatment Plan

- Bone Marrow Transplant Complications:
 - Decreased mobility and joint ROM
 - Decreased endurance
 - Increases fatigue
 - Decreased strength
 - Increased pain
 - Decreased function
 - Decreased motivation
 - Decreased pulmonary function

Platelets

- < 20,000 No activity
- 20,000-30,000 Exercise at bedside. No ambulation
- 30,000-50,000 Ambulation and Strengthening. No resistance
- >50,000 All activities. With or without resistance.

Progressive Relaxation

- Close your eyes...deep breathing
- Image: ocean, mountains, etc. see it/hear it/feel it
- Contract—relax mildly with 5 count
 - Forehead/Face/Neck/Shoulders/Upper Arms/Forearms/Hands/Chest/Abs/Gluts/Upper Legs/Calves/Feet
- Deep breathing ... total body contract/relax
- Repeat total process

Modality Contraindications

- Cold
 - Over dysvascular tissue
 - Transient increase in blood pressure
 - Delay in wound healing
 - Nerve injury
 - Peripheral vascular disease
 - During radiation
 - Possible metastasis

Contraindications

- Deep Heat
 - Over dysvascular tissue
 - Over poor sensation
 - Increase in bleeding
 - Directly over tumor
 - Over acute injury
 - Open wounds
 - Elevated temperature
 - Metal implants
 - Pacemaker or other implanted device
- Electrical stimulation
 - Possibility of pathologic fractures
 - Implanted device
 - Cardiopulmonary insufficiency
 - Active phlebitis
- TENS
 - Implant
 - Directly over wound
- Traction
 - Structural changes possible pathologic fx
- Compression Pump
 - Active disease..Mets can occur through pump activity
 - Manual Therapy

Rehabilitation

- Rehabilitation interventions should begin at bedside, getting patient OOB as soon as possible, working towards discharge.
- Intense rehab after discharge is determined by patient's life expectancy (> 1 year) and medical capabilities to participate (including motivation and mental considerations).
- After discharge to home setting, it is important to assure that patient has proper equipment and supplies.
- All follow-up programs must be set (including proper referrals) at time of discharge.

Brain Cancer

- 17,900 new cases/year

- Symptoms vary, but could be *similar* to a patient who has sustained a *traumatic brain injury* or a *stroke*.
- *Differences* include: Uncertain *prognosis* due to potential *progression* or *recurrence* to the cancer patient. Improvement can be noted after surgery and other medical interventions.
- Once medically stable: OOB, increase periods of sitting, then followed by active rehab program.

Cancer of the Spine

- *Primary tumors* of vertebra (multiple myeloma) are uncommon, although *metastasis* to the spine is *frequent*. Symptom = *Pain*, which is made *worse by activity* or straining. More persistent than general back pain and *increased at night, without relief with rest*.
70% of all spinal cord compression leads to paralysis. 1/2 of all spine tumors = thoracic
- *Management* for spinal mets generally *nonsurgical* with radiation, chemo, and orthotic stabilization
- Neuro complications: Decreased motor power and sensation, pressure sores, urinary and sexual dysfunctions, pain, contractures, circulation, and respiratory disturbances.
- *Prognosis sets treatment plan*

Head and Neck Cancer

- >70,000/year
- Impaired cosmesis, oral communication, feeding, and respiration. Possible problems with sight, hearing, taste, and smell.
- Surgery followed by radiation could lead to skin erythema, blistering and peeling, edema, delayed healing, atrophy and fibrosis reducing movement, nerve damage, muscle and sensory deficits, dry mouth, and lost taste.

Lung Cancer

- 177,000 diagnosed per year.
- Physical disabilities: respiratory insufficiency, shoulder pain and stiffness.
Scoliosis and possible neuromuscular disorders (weakness/coordination).
- Generally do not receive adequate attention due to high mortality and short life expectancy.
- Best prevention of respiratory complications:
Pre-op teaching
Deep breathing exercises
Segmental breathing
Effective coughing
Postural drainage
- 1st day postop: eliminate mucus (prevent pneumonia)
- promote ambulation and strength.

Breast Cancer

- Therapy begins 2-5 days postop.
- Deep breathing and relaxation beneficial
- Range of motion (gentle)
- Movement with support as needed
- Isometrics of involved elbow/wrist/hand
- Drains removed increase exercise (active shoulder)
- Home exercise program
- Other factors:...inflammation, scar formation, obesity,

thrombophlebitis, and poor arm position.

Cancer of the Extremities

- Primary malignant tumors of limbs require *surgery*. Goals: *Remove tumor* (wide margins or possible radical resection).
- *Reconstruction* (optimal function and cosmesis).
- Past: amputation most accepted.
- Present: *Limb preservation* (reconstruction).
- METS to limb less common than spine.
- Surgery:
Preop: Rehab following diagnosis (amputation or limb sparing). Education of interventions.
Post-op: Brief immobilization, with aggressive physical therapy to return to function ASAP.

Orthopedic

- MET bone cancer
50% cortex involved ... No Ex/NWB
25-50 ... ROM/No stretch ... PWB
0-25 ... Sub-max isometric ... aerobic (bike low resist)
- Limb Sparring
2-21 days ... Distal ROM
21-28 ... PROM affected jt/isometrics ... PWB crutches
28+ ... Active ROM; isometrics; brace
- Hip and femur lesions avoid ... Hip flex > 90 ... Hip rotation and adduction

General Oncology Rehab

- Function/cardio-endurance/energy conservation/pain management/strength-balance/education.
- 1st visit ... evaluation/OOB 1 hour/energy conservation/deep breathing.
- 2nd visit ... OOB < 1 hours 2-3 x/day/energy and safe home techniques/vital signs with ambulation 20-40'/cool down.
- 3rd visit ... OOB 2-3 hours 2-3x/day/continue energy conservation/ambulate as tol./home program/evaluation home.

Lymph System

A network of the body that makes and stores cells that fight infection and clears the tissue spaces of excess fluid and cells. This system is composed of lymph vessels, lymph nodes, and lymph organs such as the spleen.

Lymphedema

Abnormal accumulation of lymph in the tissue, which cause swelling in the arm or leg.
Due to inability of the lymph system (vessels and nodes) to transport the load of the lymph to the exits.

2 Types of Lymphedema

Primary: caused principally by underdevelopment of the lymph channel system.
Secondary: caused by damage to the lymph channel system, such as infection, scarring, an accident, radiation therapy, or surgery.

Lymphedema Treatment Plan

- Initial evaluation
- Patient education and precautions
- Exercise program
- Compression garments
- Compression pumps
- Manual massage techniques

- Compression Wrapping
- REID Sleeve
- Pharmacological Treatment
- Life Style

Prevent Lymphedema

- Avoid cuts, scratches, and irritations (electric razor—cut nails straight across)
- No injections in affected arm
- Avoid wasps, bees, and other insects (repel)
- Avoid extreme temperatures (hot and cold)
- Avoid burns (sun and fire)
- Avoid arm pressure (blood pressure, tight clothing [elastic] or jewelry...handbag)
- Avoid underarm irritation (deodorant-shave)
- Avoid arm/leg strain (10# limit—position every 1/2 hour—don't cross legs)
- Increased pressure on aircraft
- Call MD with problems (temperature, redness, swelling)
- Air travel—wear compression

Contraindications - Beate Carriers - Clinical Mgt. Vol 8 #5

- Acute swelling due to clot blocking a major vessel (Thrombosis) could move clot to lung = Pulmonary Embolism.
- Untreated cancer with METS = spread cancer cells.
- Bacterial infection may spread with lymph.
- Radiation scar. Wait 5 wks, after tx. Fragile.
- No intense ab work during menstruation, pregnancy, or abdominal complaints.

Diet

- Linked to colon, breast, and prostate cancers.
- The American Cancer Society reports that diet modifications which decrease fat and increase fiber consumption have the potential to decrease cancer.
- The American Institute for Cancer Research developed 50 nutritional tips, including such categories as: *Tips for eating more fruits, vegetables, and grains. *Hints for skimming the fat, and *Ideas for healthy living.

Nutritional Problems Associated with Cancer Patients

- Blockage of food passageways in some part of the digestive system. Example: Tumors
- Chewing and swallowing problems. Example: mouth and throat pain or lesions due to medical interventions
- Altered taste perception.

Possible Help to Nutritional Problems

- Nausea/Vomiting
- Anorexia
- Mouth Dryness
- Mouth Sores
- Diarrhea
- Constipation

Survival

- 1900s little hope of survival
- 1930s less than 1 in 5 alive 5 years after treatment
- 1940s 1 in 4
- 1960s 1 in 3
- Presently 4 of 10 will be alive 5+ years

Hospice (Palliative, Terminal or Comfort Care)

- Started in England/1974 New Haven, Conn.
- 1978 National Hospice Organization
- 1995 U.S. Hospice Programs = 2000
- Goals: Manage pain/Comfort/Support to patient and family/Volunteer training.
- P.T. Plan goals with patient input/Set patient needs depending on status/Short term goals.
- Documentation to justify treatment plan.

Tips for Building an Oncology Rehabilitation Program

- Increase visibility of rehabilitation into oncology treatment plans with early intervention to prevent functional decline and ability to restore quality of life.
- Increased involvement in clinical studies to include outcomes for the oncology patient.
- Organization of rehab team to assure quality of care to promote functional outcomes.
- Progress treatment plans to map out vocational and psychological programs.

Join the Oncology Section

- Network with therapist active in cancer rehabilitation
- Educate the patient, health care provider, and public of the benefits of cancer rehab
- Participate in research studies
- Quarterly publication
- SIG: HIV/AIDS
- Be apart of a growing section that Needs your participation

*Join
the
Oncology Section*

