Cancer Rehab and Exercise for the Patient with Multiple Myeloma

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Go Big or Go Home

• Estimated 95,874 people living with or in remission from multiple myeloma in the US
• Estimated 24,050 new cases 2014
• Average age at diagnosis 69 years old
• 5 year survival has increased to 47%
Good News

- Improved treatments lead to increase remission rates and extended survival
- Patients that are the healthiest will have more options of treatments available to them and will withstand and recover better from the treatments
- QOL
Bad News

- 80% patients with MM present with bone involvement and anemia
- Pain and Fatigue
- Comorbidities as average age at diagnosis > 60
Downward Spiral of MM and Treatment

- Rest leads to
  - Decrease aerobic capacity
  - Decrease muscle strength
  - Increase effort to perform daily activities
  - Increase fatigue limiting ability to perform daily activities
  - Spiral continues down
Current Treatment / Best Practice

• Traditional Care Team:
  – Medical Oncology
  – Orthopedic Oncology
  – Radiation Oncology

• Paradigm shift
  – Rehab as integral team member from diagnosis thru survivorship
Cancer Rehab Team

• Physical Therapy
• Occupational Therapy
• Speech Therapy
Multiple Myeloma and CRAB
CRAB

- C  Hypercalcemia
- R  Renal failure
- A  Anemia
- B  Bone lesions
Multiple Myeloma Factors Affecting Mobility

• Bone Disease
  – Vertebral compression fractures with or without spinal cord compression
  – Impending or pathologic fractures
  – Hypercalcemia

• Anemia
  – Fatigue
  – Weakness
  – Shortness of breadth
Factors Affecting Mobility

• Peripheral Neuropathy
  – Decrease sensation/possible weakness
  – Impaired balance
  – Fall Risk

• GI Dysfunction
  – Nausea/Vomiting
  – Diarrhea
  – Constipation
  – Decrease appetite/weight loss
Factors Affecting Mobility

- **Swelling**
  - Possible DVT
  - LE heaviness and fullness
- **Amyloid deposition**
  - Organ shut down
- **Pain**
Cancer Rehab Evaluation

- Prescription to Therapy
- Insurance is checked
- Review of Medical Record
  - Imaging for bone survey
  - Labs
  - Oncologic history
  - Recent notes
Subjective

- Patient tells their story
  - Establish relationship to gain the patients trust and confidence that you as the healthcare provider
    - Content expert
    - Care about the patient/family
      - Current level of activity
      - Diet/Hydration/Weight
    - Part of the treatment team
    - Won’t hurt them
    - Establish the patients goals
Objective Exam

• Based on Medical History
• Observation/Posture
• Breathing patterns
• ROM
• Strength MMT/Functional Strength
• Sensation/Proprioception
• Gait/Stairs
• Balance/6 minute walk test/Berg
• Functional Mobility/Transfers
Assessment/Plan

- Establish functional need for skilled therapy services
- Establish functionally based goals
- Establish a Plan of Care for treatment
- Send it off many times to be signed by the referring provider as many times the patient has Medicare
- Plans of care have to be updated in our system every 10th visit or 90 days whichever sooner
• Based on musculoskeletal status, labs, pain level, patient goals and how the patient looks and acts
Strength Training

- Low load bed/chair exercise
- Body weight/closed chain exercise
- Resistance bands
- Free weights
- Strength machines
Aerobic Conditioning

- Aerobic conditioning
  - Based on the 6 minute walk test
    - Rate of Perceived Exertion: RPE 0-10
    - Low intensity to maintain function or prevent deconditioning
      - 3-5 minutes of activity several times/day 7 d/wk
      - RPE 2-3
    - Moderate intensity to promote health
      - Goal >30 minutes/day 5 – 7 d/wk
      - RPE 3 - 5
Body Mechanics/Flexibility

• Instruct in hip hinging
• Don’t bend and twist
• Proper sit to stand
• Log roll
• Maintain functional muscle length and joint mobility (LE’s)
Gait/Balance

• Fall Risk
  – Cane/Walker/Wheelchair

• Gait mechanics

• Balance exercises
  – Eyes open/eyes closed (shower)
Diaphragmatic Breathing

- Proper breathing technique
- Pain Control
Assistive Devices

- Reacher/grabber
- Long handled shoe horn/sponge
- Raised toilet seat
- Leg assists
- Elastic shoe laces
- Compression stockings
Research on Multiple Myeloma and Exercise

- Not a great body of high grade evidence
- Cochrane Review 2014 Aerobic physical exercise for adult patients with haematological malignancies (Review)
- Started with 1518 publications, excluded 1477 as did not meet initial inclusion criteria
- Ultimately included 9 studies
Cochrane Review Authors Conclusions

• No difference in mortality between exercise and control group
• Physical exercise added to the standard of care can improve QOL, physical functioning, depression and fatigue
• Inconclusive evidence for anxiety, physical performance, serious adverse events and adverse events
Wilson has found exercise to be the most important component of her recovery. “The number one health improvement factor is exercise,” she said. After her diagnosis, she took up Tai Chi, a form of relaxation and meditation she found therapeutic during her multiple myeloma and amyloidosis treatment.
Wilson also does yoga and recently completed a 5k run, both remarkable feats for someone who could not even sit Indian style on the floor when her legs and knees were swollen with edema. “I have to move, and the more I move, swim, and walk, the better I feel.”
“I’ve started to be my old self, more and more. As I age, I feel I have some time to make up, so I can really subtract those years [with myeloma and amyloidosis] from my chronological age!” she said, laughing. “Those don’t count, so we’re going back to 54!”
AMCG Goals of Exercise Prescription for Patients with Cancer

- To regain and improve physical function, aerobic capacity, strength and flexibility
- To improve body image and QOL
- To improve body composition
- To improve cardiorespiratory, endocrine, neurological, muscular, cognitive and psychosocial outcomes
- To reduce, attenuate and prevent long term and late effects of cancer treatments
Aerobic Activity
- 30 minutes/day; 5-7 days/week of moderate activity
- Can break into shorter sessions

Strength training
- 2-3 times/week; start low and slow

Flexibility

Individualized program

Follow precautions and guidelines

Listen to your body

During cancer treatment be as physically active as you can be
## Exercise Guidelines

<table>
<thead>
<tr>
<th>Contraindication</th>
<th>Implications</th>
<th>What to look for</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Hemoglobin level &lt; 8.0 g/dL&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Anemia, Reduced oxygen carrying capacity</td>
<td>Elevated heart rate, arrhythmias, rapid/difficulty breathing, extreme fatigue&lt;sup&gt;2&lt;/sup&gt; and high blood pressure</td>
<td>Avoid activities requiring high O2 transport (high intensity)&lt;sup&gt;1&lt;/sup&gt;</td>
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<td>Absolute neutrophil count ≤ 0.5 x 10&lt;sup&gt;9&lt;/sup&gt;/microliters&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Low white blood cell count, Granulocytopenia, High susceptibility to infection</td>
<td>If client knows values, they must rely them to exercise professional</td>
<td>Avoid activities increasing risk of bacterial infection&lt;sup&gt;1&lt;/sup&gt; Limit group sizes, restrict those who are contagious from attending class</td>
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<td>Platelet count &lt; 50 x 10&lt;sup&gt;9&lt;/sup&gt;/microliters&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Thrombocytopenia, Easily bruised</td>
<td>Bruising, Swelling at site of venipunctures&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Avoid activities increasing risk of bleeding&lt;sup&gt;1&lt;/sup&gt; – e.g. eccentric work and lifting heavy weights (because of increased tissue damage), high impact sports</td>
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<td>Fever &gt; 38 C (100.4 F)&lt;sup&gt;1&lt;/sup&gt;</td>
<td>May indicate systemic infection and should be investigated&lt;sup&gt;1&lt;/sup&gt; May indicate pulmonary toxicity&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Increased respiration, feeling cold, increased heart rate</td>
<td>Avoid high-intensity exercise&lt;sup&gt;1&lt;/sup&gt;</td>
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<td>Ataxia, dizziness, or peripheral sensory neuropathy&lt;sup&gt;1&lt;/sup&gt;</td>
<td>At higher risk for falls if sudden onset, stop exercise immediately</td>
<td>Confusion, memory loss, seizures, loss of sensation, blurred vision, foot drop, muscle weakness, balance problems&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Avoid activities requiring significant balance/coordination&lt;sup&gt;2&lt;/sup&gt; Work on balance while keeping safety a priority Keep exercise instructions clear and simple</td>
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<td>Severe cachexia (loss of &gt;35% of premorbid weight)&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td>Limit exercise to mild intensity, depending on degree of cachexia&lt;sup&gt;1&lt;/sup&gt;</td>
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<tr>
<td>Dyspnea&lt;sup&gt;1&lt;/sup&gt;</td>
<td>May indicate pulmonary toxicity&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Investigate the cause</td>
<td>Exercise to tolerance&lt;sup&gt;1&lt;/sup&gt;</td>
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<tr>
<td>Bone Pain&lt;sup&gt;1&lt;/sup&gt;</td>
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<tr>
<td>Severe nausea&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Changes in intestinal mucosa, may lead to changes in intestinal absorption Malnutrition Low exercise capacity</td>
<td>Nausea, vomiting, loss of appetite, diarrhea, loss of sense of taste, dehydration&lt;sup&gt;2&lt;/sup&gt; Investigate cause</td>
<td>Exercise to tolerance&lt;sup&gt;1&lt;/sup&gt; Contact supportive care nurse</td>
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<tr>
<td>Extreme fatigue and/or muscle weakness&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
<td>Exercise to tolerance&lt;sup&gt;1&lt;/sup&gt;</td>
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Must Haves

• Medical clearance
• Pre exercise screening
• Exercise monitoring/progression throughout the continuum of care
Pick one, both or none of the above

- No pain, No Gain
- Just Do It
BUILDING STRENGTH AND SELF-CONFIDENCE FOR CANCER SURVIVORS