The etiology and management of fatigue in individuals with cancer: An update

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Overview

Etiology
Screening
Assessment
Management
  ◦ Medications
  ◦ Exercise
  ◦ CBT
  ◦ Complementary Therapies
Edmonton Fatigue Framework

Sources of stress
- Stress of advanced cancer and its treatment

Sources of energy for adaptation
- Muscle endurance
- Hemoglobin
- Muscle mass
- Muscle strength
- Immune fx (CRP, TNF alpha, IL-1, IL-6)
- Cognitive capacity
- Sleep quality
- Nutritional status

Results of inability to adapt
- Tiredness
- Fatigue
- Exhaustion

Consequences of inability to adapt
- Emotional reactivity
- Altered social interaction

Olson et. al., 2008
(MASCC Fatigue Study Group – Biomarker Working Group et al., in press)
# Manifestations of Fatigue

<table>
<thead>
<tr>
<th>COGNITIVE/BEHAVIOURAL</th>
<th>PHYSICAL FUNCTION/ACTIVITY</th>
<th>ANOREXIA/CACHEXIA</th>
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<tbody>
<tr>
<td>Symptoms of anxiety</td>
<td>Decreased muscle function</td>
<td>Anorexia/cachexia syndrome</td>
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<td>Depressive symptoms</td>
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<td>Altered sleep quality</td>
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<td>Perceived cognitive impairment</td>
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Case definition

Required components:
- Decline in muscle function
- Increase in emotional lability
- Decreased sleep quality
- Decline in perceived cognitive function

Optional components associated with advanced cancer in some tumor groups:
- Anorexia/cachexia syndrome
Fatigue Guidelines


Screening

Numerical Rating Scale (self report):

0  1  2  3  4  5  6  7  8  9  10

Mild Fatigue:  1-3
Moderate Fatigue:  4-6
Severe Fatigue:  7-10
Assessment

Mild (1-3)
- No further assessment required

Moderate (4-6) and Severe (7-10)
- Complete focused assessment: OPQRSTUIV
- Use of an valid and reliable fatigue scale
- Obtain lab work and history to identify contributing factors
  - Complications of treatment (anemia, infection, fever)
  - Nutritional deficiencies (weight history, diet patterns)
  - Fluid/electrolyte imbalance (sodium, potassium, magnesium, calcium)
  - Medications (opioids, antihistamines, antidepressants, alcohol/recreational drugs)
  - Comorbid conditions (cardiac, pulmonary, metabolic, endocrine, hepatic, renal, neuro, depression, anxiety, insomnia, dementia)
  - Other symptoms (pain, depression, anxiety, sleep: scores of 4/10 or more refer to guidelines for depression, anxiety, and sleep)
  - Inflammation (CRP)
- Physical exam with particular emphasis on muscle strength and function
Assessment links intervention to stage of disease and disease trajectory

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<th>Treatment</th>
<th>End of Life</th>
<th>Survivors</th>
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<td>Early stage</td>
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<td>Late stage</td>
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Fatigue Interventions

Eligibility criteria
Adults diagnosed with cancer who scored fatigue at > 3/10 or greater

Types of interventions
Any pharmacological and any non-pharmacological (psychosocial, CBT, psycho-education or patient education, mindfulness meditation, yoga, exercise/activity, complementary medicine) interventions for the management of CRF in adult patients.

Methodological quality
1) AGREE II to assess the variability in the quality of the guideline process.
2) AMSTAR (Assessment of Multiple Systematic Reviews) to assess the methodological quality of the systematic reviews
3) Risk of Bias Tool by the Cochrane Collaboration16 to assess Rats.
Medications

1. There is insufficient evidence to recommend pharmacological agents for fatigue at any stage of disease.
2. Tentative trend in benefit for methylphenidate in advanced disease but safety was not confirmed to recommend use
3. Minimal benefit of short-term use of dexamethasone in advanced cancer
4. Co-enzyme Q10 (CoQ10) supplementation was not superior to placebo.
Exercise

1. Increasing physical activity is associated with a reduction in fatigue in cancer patients and survivors. Overall, we found that exercise moderately reduced CRF among all types of cancer patients diagnosed with fatigue regardless of stage of treatment; significant benefit shown ($p=0.0005$).
Cognitive Behavioural Therapy

1. Education and psychosocial interventions are likely to be effective in reducing fatigue but the conclusions are not definitive.

2. Limited evidence that general psychosocial interventions that are not targeted specifically to fatigue are effective.
Complementary Therapies

1. There is insufficient evidence from 6 identified systematic reviews and 5 RCTs for the effectiveness of acupuncture for cancer related fatigue.

2. A systematic review of complementary interventions including massage, healing touch, relaxation training, and hypnosis, for treatment of cancer related fatigue provides limited evidence for the effectiveness of these interventions.

3. Ginseng, and vitamin supplements are not beneficial in treating cancer related fatigue.

4. Chinese herbal medicines are not beneficial in treating cancer related fatigue.
Questions?
References


