Survivorship isn’t an afterthought—it’s a distinct phase in the cancer trajectory. Shore up your understanding of cancer’s specific long-term and late effects with new information on their prevalence, contributing factors, symptom identification, and interventions. You’ll take part in case studies that illustrate typical and atypical clinical presentations and management recommendations. The impact of treatments from chemotherapy and surgery to radiation or endocrine therapy will also be explored.

**Content Area:** Clinical Practice

**Content Level:** Intermediate

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Nothing to Disclose

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**Full Disclosure:**
Nothing to Disclose

**Objectives:**
At the end of this session, participants will be able to:
1. Identify long-term and late effects related to cancer treatment.
2. Describe strategies for management of post treatment-related sequelae.

**Content Outline:**
I. Overview of survivorship
II. Review of long-term effects
III. Review of late effects
   A. Chemotherapy
   B. Surgery
   C. Radiation therapy
IV. Monitoring the health of cancer survivors
V. Managing late effects
   A. Fatigue
   B. Cognitive changes
   C. Pain
   D. Cardiovascular changes
   E. Other
VI. Case studies

**Bibliography:**


### Long-term Effects
- Any side effect or complication of treatment for which a patient must compensate
- Begin during treatment and continue beyond the end of treatment
- Fatigue, pain, weight gain, early menopause, anxiety

### Late Effects
- Unrecognized toxicities which are absent or subclinical at the end of therapy
- Manifest months to years later
- Congestive heart failure, osteoporosis, second malignancies, cognitive changes

### Late Effects of Chemotherapy
- Second malignancies
- Infertility
- Cardiovascular disease
- Peripheral neuropathy
- Fatigue
- Cognitive changes

### Late Effects of Radiation Therapy
- Second malignancies
- Pain
- Neuropathy
- Cardiovascular dysfunction

### Late Effects of Surgery
- Pain
- Reduced lung function
- Decreased mobility
- Lymphedema
- Sexual dysfunction

### Pain
- 34% of survivors report pain
- Incidence varies based on primary site and treatment
- Complaints often not addressed
- Distressing symptom!
- Survivors at greater-risk for cancer-related pain:
  - Within 5 years of treatment
  - Lower socioeconomic status
  - Dose-intensive treatments

Surgery-related Pain

- Postmastectomy pain syndrome
- Post-radical neck dissection pain
- Post-thoracotomy pain syndrome
- Post-thoracotomy frozen shoulder
- Postsurgery pelvic floor pain
- Stump pain
- Phantom pain

Chemotherapy-related Pain

- Peripheral neuropathy
- Raynaud’s syndrome
- Bony complications of long-term steroids
- Avascular (aseptic) necrosis of femoral or humeral head
- Vertebral compression fractures

Radiation-related Pain

- Radiation-induced brachial plexopathy
- Chronic radiation myelopathy
- Chronic radiation enteritis and proctitis
- Lymphedema pain
- Burning perineum syndrome
- Osteoradionecrosis

Pain

- Radiography
- Radiation-myelopathy
- Radiation-enteritis and proctitis
- Lymphedema pain
- Burning perineum syndrome
- Osteoradionecrosis

- Pain-related treatment
  - Occupational therapy
  - Physical therapy
  - Massage
  - Guided imagery
  - TENS
  - Acupuncture
  - Medications

- Recommendations for treatment

Pain

- Treatment barriers
  - Fear of medication side effects
  - Fear of addiction
  - Lack of professional knowledge
  - Medication reimbursement

### Cardiovascular Changes

- **Cardiovascular disease (CVD) risk factors**
  - Obesity/overweight
  - Smoking
  - Physical inactivity
  - Cardiotoxic cancer therapy


### Cardiovascular Late Effects

- **Incidence of radiation-induced cardiac dysfunction:** 10-30%
  - Chemotherapy-induced: dose dependent
- **Doxorubicin, cyclophosphamide & trastuzumab-based regimens; chest RT**
- **Pericardial, myocardial, & vascular damage**
  - cardiomyopathies, CHF, CAD, arrhythmias


### Cardiovascular Late Effects

- **Assessment:**
  - Shortness of breath
  - Weight gain
  - Dyspnea on exertion
  - Peripheral edema
  - Extreme fatigue
  - Rapid or irregular heartbeat, palpitations

### Cardiovascular Late Effects

- **American Heart Association Simple 7**
  - **Get active**
  - **Control cholesterol**
  - **Eat better**
  - **Manage blood pressure**
  - **Lose weight**
  - **Reduce blood sugar**
  - **Stop smoking**

http://www.heart.org/mylifecheck

### Cardiovascular Late Effects

- **Recommendations for treatment**
  - Beta blockers
  - Angiotensin-converting enzyme (ACE) inhibitors
  - Spironolactone
  - Diuretics
  - Nitrates


### Fatigue

- **Fatigue is a recognized symptom of cancer and its treatment**
- **In 1999, “cancer-related fatigue” was accepted as a diagnosis in the International Classification of Diseases 10th Revision-Clinical Modification**
- **A constitutional toxicity of clinical trials in the National Cancer Institute’s Common Toxicity Criteria (CTC)**

Fatigue

- Patients use many different descriptors: tired, “bone tired,” low-energy, weary, exhausted, sleepy
- A 2009 review by Minton & Stone found 14 different scales to measure cancer-related fatigue
- Fatigue is subjective


Fatigue

- Longitudinal study by Goedendorp et al. evaluated patients at time of diagnosis (T1), two months after the end of treatment (T2) and 14 months after the end of treatment (T3)
- Majority of patients were diagnosed with breast or prostate cancer, but also included other diagnoses
- Treatments included surgery, chemotherapy, radiation and hormone therapy.


Fatigue

- Results: 22% of the participants reported severe persistent fatigue in the year after cancer treatment.


Fatigue

- Assessment
  - Fatigue characteristics
  - Contributing factors:
    - Anemia
    - Hypothyroidism
    - Insomnia
    - Depression
    - Cardiomyopathy


Fatigue

- Recommendations for Treatment
  - Exercise
  - Exercise
  - Exercise!


Fatigue

- American Cancer Society Guidelines
  - Aim to exercise at least 150 minutes per week
  - Include Strength Training at least 2 days per week

Fatigue

- Exercise and Physical Activity
  - Randomized Controlled Trial of breast cancer survivors using Iyengar yoga to improve fatigue symptoms
  - Randomized to 12 weeks of Iyengar yoga (classes twice per week) or Health Education
  - Iyengar yoga: traditional form of Hatha yoga


Fatigue

- Exercise and Physical Activity
  - The yoga group reported significant declines in fatigue symptoms and increased vitality that persisted after the intervention


Fatigue

- Exercise and Physical Activity
  - Barriers:
    - Physical limitations
    - Safety concerns
    - Lack of motivation
    - Lack of facilities


Fatigue

- Exercise and Physical Activity
  - Preferences:
    - Walking and strength training
    - Moderate intensity
    - Instructor-led
    - With other survivors


Fatigue

- Exercise and Physical Activity
  - Options for patients:
    - What is available in your community?
      - YMCA, Iyengar Yoga, Cancer Support
    - Physical Therapy
    - Remind patients: “some activity is better than none”


Cognitive Changes

- Cognitive function involves the inter-related processes of:
  - Attention and concentration
  - Executive function
  - Information processing speed
  - Language
  - Visual-spatial skills
  - Psychomotor ability
  - Learning
  - Memory

Cognitive Changes

• Cognitive Impairment
  – Decline in one or more cognitive process
  – Described by patients as “Chemo Brain”, forgetfulness, loss of focus
  – Studies examining cancer-related cognitive impairment show ranges of survivors affected from as low as 11% to as high as 80% of those surveyed


Cognitive Changes

• Assessment
  – Characteristics
  – Contributing factors:
    • Anemia
    • Hypothyroidism
    • Insomnia
    • Depression
    • Cardiomyopathy

*look familiar?*


Cognitive Changes

• Options for patients:
  • Neuropsychological Evaluation
  • Online Cognitive Programs
  • Group Cognitive Training/Clinical Trials

Survivorship Care Plan

• What makes the survivorship care plan so special or distinct from regular progress notes?

Review and synthesize what has happened
Management of symptoms happening now
Discuss and plan for what is possibly going to happen


Key Elements

• Specific tissue diagnosis and stage
• Initial treatment plan and dates of treatment
• Toxicities during treatment
• Expected short- and long-term effects of RX
• Late toxicity monitoring needed
• Surveillance for recurrence or second cancer
• Psychosocial and vocational needs
• Recommended preventive behaviors/interventions

www.journeyforward.org

- Survivorship Care Plan Builder
- Free, downloadable tool
- To be completed by the treating oncologist
- To create custom, post-treatment care plans for cancer survivors in 5 quick steps
- Breast, colon, lung and generic plans available
- Patient Toolkit as well

www.asco.org

- General template available
- Microsoft Word and Excel versions available

Billing for Survivorship Visits

- Common misconception that billing for survivorship care is not included in cancer care
- Use the survivorship care plan as counseling and educational tool
- Document time appropriately and reflect with correct CPT code (99214, 99215)