Management of Cancer Patients: Oncologic Emergencies and Treatment Ramifications

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Objectives

- Discuss the trends in the demographics of hospice patients whose primary diagnosis is cancer
- Describe the medical guidelines available regarding treatment of oncology patients
- Review symptoms and treatment options unique to oncology patients

Trends in Demographics of Hospice Primary Diagnosis
Trends in Demographics

Reference: National Health Statistics Reports Number 38, April 27, 2011.

Trends in Demographics


Guidelines for Palliative Care
Two Guidelines Recognized by Oncologists

American Society of Clinical Oncology (www.asco.org)

National Comprehensive Cancer Network (www.nccn.org)

NCCN Guidelines for Palliative Care

Life Expectancy <6 Months Indicators Per NCCN

- Metastatic solid tumors
- Many stage IV cancers
- Poor performance status
  - ECOG >= 3 or KPS <=50%
- Persistent hypercalcemia
- Brain or cerebrospinal fluid metastases
- Delirium
- Superior vena cava syndrome
- Spinal cord compression
- Cachexia
- Malignant effusions
- Palliative stenting or venting gastrostomy
Eastern Cooperative Oncology Group

ECOG PERFORMANCE STATUS

<table>
<thead>
<tr>
<th>Grade</th>
<th>ECOG</th>
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<tbody>
<tr>
<td>0</td>
<td>Fully active, able to carry on all pre-disease performance without restriction</td>
</tr>
<tr>
<td>1</td>
<td>Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work</td>
</tr>
<tr>
<td>2</td>
<td>Ambulatory and capable of all self-care but unable to carry out any work activities. Up and about more than 50% of waking hours</td>
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<tr>
<td>3</td>
<td>Capable of only limited self-care, confined to bed or chair more than 50% of waking hours</td>
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<tr>
<td>4</td>
<td>Completely disabled. Cannot carry on any self-care. Totally confined to bed or chair</td>
</tr>
<tr>
<td>5</td>
<td>Dead</td>
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Symptoms Addressed in NCCN Guidelines

- Pain
- Dyspnea
- Anorexia/Cachexia
- Nausea/Vomiting
- Constipation
- Diarrhea
- Malignant Bowel Obstruction
- Cancer Related Fatigue/Weakness
- Insomnia/Sedation
- Delirium

NCCN Guidelines
Symptoms Addressed in NCCN

**Pain**
- Refer to NCCN Guidelines for Adult Cancer Pain
- Recognize and treat opioid induced neurotoxicity including myoclonus and hyperalgesia
- Do not reduce dose solely for decreased blood pressure, respiration rate or level of consciousness
- Consult with a pain management/palliative care specialist
- Consider sedation for refractory pain

**Constipation**
- Goal: 1 non-forced bowel movement every 1-2 days
- Prophylactic medications including stimulant laxative +/- stool softener (senna +/- docusate 2 tabs QHS and titrate)
- Manual disimpaction
- Persistent constipation
- Add bisacodyl sup, polyethylene glycol, lactulose, sorbitol, methylnaltrexone, tap water enema

**Anorexia/cachexia**
- Early satiety: metoclopramide
- Depression and anorexia: mirtazapine 7.5-30mg qhs
- Need appetite stimulant
- Megestrol 400-800mg mg/day
- Olanzapine 5mg/day
- Dexamethasone 2-8mg/day
- Consider cannabinoid

**Dyspnea**
- Morphine 2.5-10mg PO q4hr PRN SOB
- Lorazepam 0.5-1mg PO q4hr PRN anxiety
- Scopolamine SQ/topical, atropine SL, glycopyrrolate (Robinul) IV/SQ PRN secretions
Symptoms Addressed in NCCN

Nausea/vomiting
- Nonspecific nausea/vomiting
  - Prochlorperazine, haloperidol, metoclopramide, olanzapine
- Persistent nausea/vomiting
  - Add 5HT3 antagonist (ondansetron), +/- anticholinergic (scopolamine) +/- antihistamine (meclizine) +/- cannabinoid
- Still persistent nausea/vomiting
  - Add corticosteroid (dexamethasone 4-8mg BID-TID, +/- olanzapine (if not already tried)

Malignant bowel obstruction
- Corticosteroids (eg dexamethasone)
- Anticholinergics (eg scopolamine, hyoscyamine, glycopyrrolate)
- Octreotide 100-300mcg SQ BID-TID (consider early in diagnosis)

Insomnia/sedation
- Insomnia
  - Trazodone 25-100mg PO QHS
  - Olanzapine 2.5-5mg QHS
  - Zolpidem 5mg QHS
  - Mirtazapine 7.5-30mg PO QHS
  - Zolpidem 5mg QHS
  - Quetiapine 2.5-5mg QHS
  - Lorazepam 0.5-1mg QHS

Delirium
- Mild/Moderate
  - Haloperidol 0.5-2mg PO BID-TID
  - Risperidone 0.5-1mg PO BID
  - Olanzapine 5-20mg PO Qday
  - Quetiapine 25-200mg PO/SL BID
- Severe
  - Haloperidol 0.5-2mg IV q1-4hr PRN
  - Olanzapine 2.5-7.5 mg/day PO/SL q4-4hr PRN
  - Chlorpromazine 25-150mg PO/PR/IV q4hr PRN (bedbound only)
  - Lorazepam 0.5-2mg SQ/IV/PO q4hr PRN
Oncologic Advanced Symptoms in End of Life Care

Hypercalcemia Definition

- Normal calcium 8.5-10.5 mg/dl
- Hypercalcemia
  - Mild ULN-12 mg/dl
  - Moderate 12-14 mg/dl
  - Severe 14+ mg/dl
- Must correct for low albumin
  - Corrected Ca = Ca + 0.8(4 – albumin)

Hypercalcemia Incidence

- 10% of cancer patients will develop hypercalcemia
- Most common malignant myeloma, breast, lung and renal cancers
- Up to 20% of patients with hypercalcemia will not have bone mets
- Poor prognostic factor
  - Life expectancy 3-4 months
**Hypercalcemia Symptoms**

- **Renal**
  - Polyuria, polydipsia, dehydration, decrease GFR, nephrocalcinosis

- **Gastrointestinal**
  - Constipation, nausea, anorexia, vomiting, acute pancreatitis

- **Neurologic**
  - Lethargy, fatigue, confusion, irritability, depression, sleep disorders, muscle weakness, hypotonia, stupor, seizures, coma

- **Cardiac**
  - Shortened QT interval, widened T wave, heart block, asystole, A-V arrhythmia, synergism with digoxin

**Hypercalcemia Treatment Protocol**

1. IV/SQ hydration
2. Avoid medications that may worsen symptoms
3. Decadron (dexamethasone) PO/SQ/IV BID (doses vary)
4. Consider Miacalcin (calcitonin-salmon) 200units/ml SQ BID
   - Miacalcin nasal (calcitonin-salmon nasal) 200units/act 1 spray each nostril qDay
   - **Off label use of this medication**
5. Consider bisphosphonate
   - Zometa (zoledronic acid) IV 4mg Qmonth (decrease dose for renal insufficiency)
   - Aredia (pamidronate) 90mg IV Qmonth

**Superior Vena Cava Syndrome**

- Obstruction by compression or thrombosis of the large veins

- Most common in lung cancer (75% of SVC syndrome cases)

- Also lymphoma, breast cancer and other solid tumors

- Clot on end of central line will have similar symptoms
**SVC Signs and Symptoms**

- **Clinical Signs**
  - Thoracic vein distention, neck vein distention, edema on face, plethora of face, cyanosis

- **Symptoms**
  - Dyspnea (especially when lying down), tachypnea, cough, chest pain, dysphagia, sensation of fullness in head (most often in the AM)

**Superior Vena Cava Syndrome Treatment**

- Best rest with head of bed elevated
- Oxygen for dyspnea and tachypnea
- Corticosteroids to decrease inflammatory swelling with severe edema
- High dose steroids
- Diuretics and low salt diet to reduce edema
- Radiotherapy

**Superior Vena Cava Syndrome - Radiotherapy**

- Patient should have this option unless they are very ill or refuse intervention
- Lesions may increase in size and cause obstruction despite therapy
- Many hospice patients have already had radiation and tumor re-obstructs the vessels after admission to hospice
- Interventional Radiology – Stents
  - Intravenous thrombolysis
  - Percutaneous transfemoral dilation
  - Insertion of expandable metallic endoprosthesis
Spinal Cord Compression

- Annual new cases >20,000
  - Estimated 5-10% of patients with malignancy

- Clinical presentation
  - Majority complain of progressive radicular pain which is followed by neurologic symptoms

Spinal Cord Compression – Lhermitte's Sign

- “The Barber Chair Sign”
  - Flex patient's chin on chest: shock like pain runs down the arms or trunk
  - Radicular pain may occur spontaneously with coughing or sneezing due to compression or demyelination in cervical or upper thoracic region

- Leptomeningeal Metastasis
  - Involvement of tumor in the meninges, fluids of the brain and spinal cord
  - May cause seizures, myoclonus, myoclonic jerks, fluctuating changes in level of consciousness

Spinal Cord Compression Treatment

- Pharmacologic
  - Dexamethasone PO/IV/SQ
    - Large variations in dosage evaluated (10-100mg/day)

- Radiation?
  - Excellent response rates
  - Short course: 8 Gy x 2 days
  - 35% of non-ambulatory patients regained walking ability

- Surgery?
  - Surgery followed by XRT treatment preferred for non hospice patients
**Increased Intracranial Pressure**

- Patients at risk: any patient with brain tumor involvement
  - Solid tumors most common to spread to the brain include breast, lung and melanoma

- Normal brain pressure
  - Adult: 5-15mmHg
  - With brain tumor: 15-22mmHg
  - Symptomatic: >20mmHg
  - Death: 60mmHg

**Increased Intracranial Pressure—Signs/Symptoms**

- Early: headache, blurred vision, dizziness, nausea/vomiting (projectile), changes in systemic BP, changes in mood/behavior
- Late: changes in LOC, papilledema, focal signs, lateralizing signs, seizures
- Psychomotor retardation (slowed verbal and motor response) progressing to stupor, coma and death
- Cerebral herniation is the most dire outcome

**Increased Intracranial Pressure—Treatment**

- Steroids are the mainstay of treatment
  - Decadron (dexamethasone) PO/PR/SQ/IV/IM
  - Continue up until the moment of death
  - Multiple side effects
- Seizure prophylaxis
- Good blood pressure control
- Nursing interventions
  - Positioning the head
  - Hyperventilation
Coagulation

- Cancer patients have a 6x risk of DVT
  - Malignant cells secrete pro coagulants and cytokines
  - Pancreatic cancer highest risk (57% of patients)
- Pharmacologic risk factors
  - Targeted therapy: lenalidomide (Revlimid), bevacizumab (Avastin)
  - Colony Stimulating Factors: epoetin alpha (Procrit), darbepoetin (Aranesp)
  - Hormonal Agents: tamoxifen, megestrol (Megace)

Coagulation: DVT treatment in malignancy

- Guidelines recommend LMWH for 3-6 months for all patients with malignancy
  - LMWH: enoxaparin (Lovenox), fondaparinux (Arixtra), dalteparin (Fragmin)
- Remission: can stop DVT treatment after the 3-6 months
- No remission: convert to oral anticoagulant after the 3-6 months of LMWH and continue indefinitely
  - Oral anticoagulant: warfarin (Jantoven), dabigatran (Pradaxa), rivaroxaban (Xarelto)

Cardiotoxicity

- Type I
  - Acute: immediate onset after a single dose
  - Chronic: onset usually within 1 year
  - Late Onset: develops several years or decades after therapy
  - Agents: anthracyclines
    - Doxorubicin (Adriamycin), epirubicin (Ellence), idarubicin (Idamycin)
- Type II
  - Not dose related
  - Does not occur in all patients
  - Severity varies widely
  - Agents: EGFR agents
    - Trastuzumab (Herceptin), TKIs (many oral chemotherapy agents)
Cardiotoxicity: QT prolongation

- Chemotherapy agents that prolong QT intervals
  - Dasatinib (Sprycel) – CML, ALL
  - Eribulin (Halaven) – metastatic breast cancer
  - Fluorouracil (5FU) – colorectal cancer, breast cancer
  - Lapatinib (Tykerb) – metastatic breast cancer
  - Nilotinib (Tasigna) – CML
  - Pazopanib (Votrient) – renal cell cancer, soft tissue sarcoma
  - Tamoxifen (Soltamox) – breast cancer
  - Sorafenib (Nexavar) – hepatocellular cancer, renal cell cancer
  - Sunitinib (Sutent) – gastrointestinal cancer, renal cell cancer, pancreatic cancer

Symptoms Unique to a Type of Cancer

Breast Cancer

- Cardiotoxicity
  - Most patients will have been on either an anthracycline or trastuzumab

- Endocrine therapy
  - Patients will be on tamoxifen or an aromatase inhibitor for 5-10 years following chemotherapy

- Tamoxifen
  - Side Effects: hot flashes, nausea, vaginal discharge, arthralgia, VTE, endometrial cancer

- Aromatase Inhibitors
  - Agents include: anastrozole (Arimidex), letrozole (Femara), exemestane (Aromasin)
  - Side effects: hot flashes, arthralgia, myalgia, nausea, diarrhea, bone mineral density loss
**Lung Cancer**

- Erlotinib (Tarceva) 150mg Qday
- Only chemotherapy indicated for ECOG status 0-4
- Take on an empty stomach
- Food will increase absorption and then increase side effects
- Drug interactions:
  - Most notable PPIs and H2 antagonists
  - PPI: omeprazole (Prilosec), esomeprazole (Nexium), lansoprazole (Prevacid), pantoprazole (Protonix), rabeprazole (Aciphex), dexlansoprazole (Dexilant)
  - H2 antagonist: famotidine (Pepcid), ranitidine (Zantac), cimetidine (Tagamet)
- Smoking induces metabolism
- Side effects: rash, acne, diarrhea

**Multiple Myeloma**

- Signs/Symptoms (CRAB acronym)
  - Calcium. Corrected calcium >11.5mg/dl.
  - Renal dysfunction
  - Anemia. <10g/dl or 2g/dl below LLN
  - Bone lesions
- Lenalidomide (Revlimid)
- Increased risk of DVT
- Patient will be on ASA prophylaxis

**Myelodysplastic Syndrome (MDS)**

- Anemia
  - Blood transfusion and ESO therapy including epoetin alpha (Procrit) or darbepoetin alpha (Aranesp)
- Infection
  - Principal cause of death in MDS
- Bleeding
  - Patient will have received platelet transfusions
- Conversion to AML
Summary

- The number of patients with hospice as a primary diagnosis is on the decline.
- Oncology is one of the few disciplines that have palliative care guidelines that address end of life symptom management.
- There are some symptom management issues that are unique to oncology that should be considered when triaging a patient.

Questions?

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