Overview

- Definition of risk assessment
- Clinical relevance of risk assessment
- Risk assessment in rural healthcare setting
- Multi-symptom risk assessment tool
- Implementation of risk assessment
- Case studies
- Conclusion
- Q & A

Objectives

- Define risk assessment for chemotherapy side effects
- Identify relevance of risk assessment prior to first cycle treatment
- Recognize challenges in the rural healthcare setting
- Determine multi-symptom risk assessment tool implementation methods

Case Study #1

- 54 y/o white female newly diagnosed with stage IIIa unresectable sq cell lung cancer, 50 lb wt loss over last 3 months, PFT’s decreased, smoked 2 ½ pk/d x 42y
- Past Med Hx: RA, Polyneuropathy, Hypoalbuminemia/Proteinuria with normal Creat, rapid heart beat
- Meds: gabapentin, Ca/Vit D, MVI  Labs: WBC 9.2, H/H 12/36, MCV 78, PIt 297, Creat 0.7 Alb 2.6

Case Study #1

Treatment Plan:
- cisplatin 50mg/m2 D1,D8 Q 28 days
- etoposide 50mg/m2 D1-D5 Q 28 days
- palonosetron IV D1, D8 dexamethasone IV D1-D5, D8
- Rx prochlorperazine, lorazepam
- Concurrent with radiation followed by 1 month rest and then docetaxel 75mg/m2 q 3 wks x 3

No risk assessment documented
Case Study #1

Chemotherapy/Radiation Course

Cycle 1
D12 - ANC 1.6, H/H 11.4/35, Plt 201 Alb1.4
D19 - NP visit c/o of dbl vision, ringing in ears, in bed most of the time, sore throat, nausea, prod cough. ANC 3.4, H/H 13/38, Plat 264
D22 - MD visit/prechemo, c/o cough, sore throat, no fever. Rx levofloxacin and proceed with tx

Cycle 2
D1 - ANC 3.6, H/H 10.4/31.7, MCV 78, Plt 248, darbepoietin initiated. No other anemia workup
D8 - ANC 3.5, H/H 10.7/31.0, MCV 79, Plt 63, sore throat and temp 99.2 noted
D13 pm - ER c/o rapid heart rate and sudden abd pain. ANC 0.2, Plt 15, H/H 10.0/28.9, MCV 77.3. Admitted - appendectomy, antibiotics, Plt and RBC’s Transfusion, filgrastim
D19 - Discharged

Recovery Period and Consolidation

Received IV iron as outpatient, WBC 5.8, H/H 9.3/26.6, Plt 303 darbepoietin
15 days after Iron, WBC 6.3, H/H 12.3/36.6, MCV 88, Plt 142
3 weeks later MD visit, feeling well, no complaints. WBC 5.2, H/H 14/42, MCV 92, Plt 132. Proceed with docetaxel

Cycle 1 docetaxel 75mg/m2.
D2 - pegfilgrastim ordered but not given.
D7 - WBC 0.8, ANC 0.2, plt 83, H/H 13.2/36.7 pegfilgrastim and levofloxacin
D16 - Seen by NP, Not feeling well, numerous complaints, N/V, trouble swallowing, SOB, cough. WBC 16.2, plt 117

Cycle 2 docetaxel same dose.
D2 - pegfilgrastim given
D16 - endoscopy - large esophageal ulcer
Did not receive docetaxel #3

Risk Assessment

"Assessing risk has always been part of the process through which healthcare providers make decisions about patient care. For many health-related outcomes, key factors have been identified that can help healthcare providers determine patients’ levels of risk."

Mary E. Ropka, PhD, RN, FAAN
Geraldine Padilla, PhD
Theresa W. Gillespie, PhD, RN
Ropka, Padilla, & Gillespie, 2005

Risk Factor

"A characteristic, behavior, or exposure that may affect a person’s likelihood of having a specified disease or health-related event."

Ropka, Padilla, & Gillespie, 2005
Risk Factors

- Risk factors have been identified for many chemotherapy-induced side effects
  - Neutropenia
  - Nausea/vomiting
  - Anemia
  - Additional side effects

- Little work has been done to develop tools
- Need for efficient identification and documentation of risk factors for nursing

Clinical Relevance of Risk Assessment

Critical for comprehensive management
- Proactive vs. reactive care
- Initiates guidelines
- Appropriate supportive care interventions
- Individualizes patient care and education
- Provides documentation
- Improves patient outcomes
- Cost effective medical office visits
- Decreased hospitalization

Management of CIN

<table>
<thead>
<tr>
<th>Management Strategy</th>
<th>Patient Time ¹</th>
<th>Caregiver Time ¹</th>
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</thead>
<tbody>
<tr>
<td>Oral antibiotics</td>
<td>2 hr 25 min</td>
<td>1 hr 34 min</td>
</tr>
<tr>
<td>IV antibiotics ²</td>
<td>11 hr 37 min</td>
<td>7 hr 14 min</td>
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<tr>
<td>Hospitalization for FN</td>
<td>6.35 days</td>
<td>4.99 days</td>
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<tr>
<td>Filgrastim ³</td>
<td>12 hr 51 min</td>
<td>7 hr 27 min</td>
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<tr>
<td>Pegfilgrastim ³</td>
<td>1 hr 59 min</td>
<td>1 hr 9 min</td>
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</tbody>
</table>

Notes

⁠¹ Represents the time affected before, during, and after the medical visit.

² An average of three (3) days of outpatient IV antibiotics were reported by the practice. Data on file, Supportive Oncology Services, Inc.

³ An average of six (6) days of Filgrastim were reported by practices.


Definitions of “Rural”

- Webster
  • “…of or like living in the country; rustic, simple, artless, uncooly, a country person”

- General healthcare literature
  • Population density in a defined area and/or distance to a sizeable city

- Government Agencies
  • Census of the Bureau
  • Office of Management and Budget
  • United States Department of Agriculture

Rural Health Care

- Montana and Wyoming
  • Health care centers deem over 96% of their counties as rural or frontier

- Colorado
  • Colorado Rural Health Center (CRHC) deems 73% of their counties rural

- Connecticut
  • 7 of 9 towns in the primary area serviced by Eastern Connecticut Hematology and Oncology Associates (ECHO) are designated rural

Rural Distribution in the US

Image Not Available
**Rural Healthcare Challenges**

- **Access to care and coverage**
  - Provider shortage
  - Pharmacy access
  - Insurance availability
- **Increased cost to patients**
- **Increased demand on caregivers**
- **Migrant populations**
- **Technology availability**

**Strategies for Success: Rural Patients**

- **Risk assessment**
- **Identify barriers/challenges**
- **Identify preventive interventions**
- **Educate patient and family**
- **Communicate with primary or other healthcare providers**
- **Follow-up phone call**

**Risk Assessment: Rural Setting**

- **Nursing significance**
  - Sensitivity to individual patient needs
  - Utilization of risk assessment
    - Information
    - Support
    - Education
  - Proactive care and education
    - Overall survival
    - Quality of life

**Rural Healthcare in the U.S.**

- **Population growth in rural states and counties**
- **Potential difficulties accessing timely, affordable, quality healthcare**
- **Unique challenges for oncology nurses**
- **Nursing opportunity to improve care with risk assessment**

**AIM Higher Initiative**

- **Quality improvement initiative involving 14 community oncology practices**
- **Designed to improve assessment, information and management of five chemotherapy-induced side effects**
  - Anemia
  - Depression/anxiety
  - Diarrhea/constipation
  - Nausea/vomiting
  - Neutropenia
- **Implementation of pre-treatment risk assessment**

**Occurrence of Risk Assessment Prior to Starting Regimen**

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<tr>
<th>Risk Assessment</th>
<th>N</th>
<th>% of Total</th>
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<tr>
<td>Anemia</td>
<td>92</td>
<td>24.47</td>
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<tr>
<td>Anxiety</td>
<td>26</td>
<td>6.91</td>
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<tr>
<td>Constipation</td>
<td>56</td>
<td>14.89</td>
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<tr>
<td>Depression</td>
<td>22</td>
<td>5.85</td>
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<td>Diarrhea</td>
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<td>17.02</td>
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<tr>
<td>Nausea</td>
<td>83</td>
<td>22.07</td>
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<td>Neutropenia</td>
<td>96</td>
<td>25.53</td>
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<tr>
<td>Vomiting</td>
<td>64</td>
<td>17.02</td>
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Risk Assessment Tool

Needs and Key Features
- Ease of use for nursing
- Standardized
- Systematic process
- Evidence based
- Customizable to clinic
- Improve consistency of care for all patients
- Provide documentation
- Enhance communication among health care team
- Address multiple symptoms

Resources for Tool Development
- American Society of Clinical Oncology (ASCO)
- National Comprehensive Cancer Network (NCCN)
- Oncology Nursing Society (ONS)
- Oncology Education Services (OES)
- Literature reviews

Neutropenia Risk Assessment

Anemia Risk Assessment

Nausea/Vomiting Risk Assessment
Case Study #1 discussion

No risk assessment completed
- Reactive side effect management
- Decreased quality of life
- Incomplete chemotherapy

Neutropenia Risks
Anemia Risks

- Hx of anemia
- Rapid heart rate
- MCV low

Nausea/Vomiting Risks

- Hx of nausea/vomiting
- Rapid heart rate

Constipation Risks

- Hx of constipation
- Medications

Oral Mucositis Risks

- Hx of oral mucositis
- Smoking

Anxiety/Depression Risks

- Hx of anxiety/depression
- Medications

Other Toxicities

- Renal toxicity
- Peripheral neuropathy
- Ototoxicity
- Thrombocytopenia
Risk Assessment Implementation

- Oncology team awareness and buy-in
- Pre-treatment focus
- Logistics of the process
  - Involvement of key players
  - Clinic-wide training
  - Patient involvement
  - Follow-up

Follow Up

- Systematic reviews of tool and process
- Updates of the tool
- State of continuous improvement for the process

Implementation Challenges

- Nursing time constraints
- Incomplete patient information
- Nursing bias (anecdotal vs evidence)
- Appropriate interventions for identified risk
- Consensus within the oncology practice

Implementation Examples

- Colorado
- Connecticut
- Montana/Wyoming

Risk Assessment: Colorado Springs

- Prechemotherapy teaching visit with nurse practitioner
- Can be initiated by physician office nurse
- Risk assessment tool placed in new patients chart prior to visit
- Nurse practitioner able to write appropriate orders/scripts and focus teaching
- Templates/guidelines in place to support nursing action

Risk Assessment: Montana

- Patient sees physician same day as first day of chemo. Risk assessment completed by RN and reviewed with MD
- Chemo orders along with appropriate supportive care interventions written
- Education done by RN - customized to patient regimen and RA findings
- Guidelines and follow-up developed to continue to proactive approach – Day 8 visit for follow-up
**Risk Assessment: Eastern Connecticut Hematology & Oncology Associates**
- Packet prepared for prechemotherapy teaching with NP and infusion nurse
- NP able to prescribe and educate based on individual needs
- Risks and interventions communicated to nurse
- Developing software to incorporate standardized chemotherapy orders with appropriate standardized antiemetics, growth factors, and bowel management strategies.

**Risk Assessment: Wyoming**
- Risk assessment completed by PA prior to first chemo
- Supportive care interventions ordered by PA
- RA filed in chart
- RN reviews RA and orders
- Extra education per RA done by PA or RN

**Case Study #2 Introduction**

**Risk assessment in action**
- Appropriate primary prophylaxis
- Planning for side effects
- Early intervention
- Patient teaching focus
- Improved patient quality of life
- Maximum chemotherapy benefit

**Case Study #2**

- 32 yo white female diagnosed with Stage II breast cancer, large tumor size, Her 2 positive, 25 pound wt loss in last 2 months, anorexia, fatigue, tearfulness since diagnosis
- Past medical Hx: smoked 1 pk/day x 19 years
- Meds: none  Pretreatment labs: WBC 9.3, Hgb 13.8, Hct 40.3, MCV 98.6, Plt 233 Chemistries normal

**Case Study #2**

- Treatment Plan:
  - doxorubicin 60mg/m2 IV D1
  - cyclophosphamide 600mg/m2 IV D1
  - Q 2weeks x 4 cycles followed by paclitaxel 175mg/m2 IV D1 q 2weeks x 4
- Risk assessment completed with prechemotherapy teaching class
- Risk identified:
  - Neutropenia: Chemotherapy regimen
  - Anemia: Myelosuppressive chemotherapy
  - Nausea/Vomiting: Chemotherapy regimen, female, <50 yo, hx motion sickness)
  - Diarrhea: None identified
  - Constipation: None identified
  - Mucositis: Chemotherapy
  - Anxiety/Depression: Symptoms of depression since diagnosis, hx of alcohol abuse
**Case Study #2**

**Patient teaching focus**
- Myelosuppresion
- Nausea/Vomiting
- Oral care
- Bowel regimen

**Primary Prophylaxis**
- Pegfilgrastim D2 cycle 1
- Close monitoring of Hgb/Hct (esp initiated cycle 4)
- Aprepitant po before chemo palonosetron, dexamethasone, lorazepam IV day of chemo
  
  Rx aprepitant, lorazepam, dexamethasone, prochlorperazine
- Rx antidepressant, psych referral

Patient received 100% of intended dose on time to assure the most favorable outcome.

**Case Study #3**

- 46yo male Caucasian diagnosed with Stage IIIa diffuse large B cell lymphoma, presented with enlarged lymph node in neck, c/o of heartburn, constipation and insomnia
- Past Med Hx: no other medical problems, hx of emesis with anesthesia
- Meds: none  Labs: nonremarkable

**Psych/Social:** Farmer/rancher, married with 4 children under the age of 9 (1 with physical disabilities), has insurance. Lives 225 miles from clinic, closest 24 hour pharmacy and hospital is 75 miles, telephone service, no internet, no cell phone service until close to town (20 miles)

- RN noted that patient voiced “all you do when you get chemo is throw-up”

**Treatment plan:** Rituximab/CHOP q 3 weeks

**What risk factors can we identify?**

- Risks identified: neutropenia, anemia, nausea/vomiting, constipation

**Interventions:**
- Palonosetron + dexamethasone IV D1
- RX promethazine, lorazepam, ondansetron samples, pantoprazole samples
- Pegfilgrastim D2
- Senokot S protocol
- Education – dietary, anti-emetics, growth factors, infection, constipation interventions
Benefits of Risk Assessment for Rural Patients

- Identification of teaching/information needs
- Prevention of side effects
- Minimization of side effect severity
- Decrease in return visits for symptom management
- Preservation of patient ability to remain independent and productive
- Decrease in burden on support persons

Summary

- Pre-treatment identification of risk factors
  - Crucial for proactive symptom management
- Proactive management is particularly important in rural patients
  - Distance from medical assistance
  - Risk of emergent side effects
- A risk assessment tool facilitates this process
  - Focuses teaching
  - Fosters appropriate and early interventions
- Improved symptom management results
  - Improved QoL
  - Improved clinical outcomes

Overall Impact

- Personal
  - Quality of Life
  - Outcomes
- Clinical
  - Strive for excellence
  - Efficient use of resources
- Economic
  - Patient and clinic
  - Third party payors

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