Ovarian Cancer Overview for Health Care Providers

• Created by the GOC CoP Nursing group:
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  – Reviewed and edited by Dr. L. Elit
The slides presented are meant to be used as an orientation package for health care providers new to gynecologic oncology; to review the management and treatment of ovarian cancer with a focus on epithelial subtypes.

Variation across the country can occur in accordance within provincial guidelines. Remember that not all patients are the same and that some deviation CAN and often does occur.
Components of an Ovary

- Tunica albuginea
- Cortex
- Granulosa cells
- Secondary follicle
- Mesovarium and blood vessels
- Degenerating corpus luteum (corpus albicans)
- Primary follicles
- Ovary
- Germinal epithelium
- Primordial follicles
- Ovarian ligament
- Medulla
- Corpus luteum
- Developing corpus luteum
- Vesicular (Graafian) follicle
- Antrum
- Oocyte
- Zona pellucida
- Theca folliculi
- Corona radiata
- Ovulated oocyte

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Incidence of Ovarian cancer

- **Incidence**
  - In 2013 it is estimated 2,600 women will be diagnosed and 1,750 women will die from ovarian cancer in Canada
  - Median age of diagnosis is 56.3 years
  - 2.9% of all cancers diagnosed in women are ovarian

- **Mortality**
  - Ovarian cancer is the most lethal of all gynecologic cancers
  - It is the 5th leading cause of cancer deaths overall
  - 5 year survival rate is 45.5%

- **Lifetime Risk**
  - 1.5% or 1 in 68 women
Stage and Survival

<table>
<thead>
<tr>
<th>Stage</th>
<th>5 Year Survival Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>89%</td>
</tr>
<tr>
<td>II</td>
<td>66%</td>
</tr>
<tr>
<td>III</td>
<td>34%</td>
</tr>
<tr>
<td>IV</td>
<td>18%</td>
</tr>
</tbody>
</table>

Surveillance, Epidemiology, and End Results Program (SEER). National Cancer Institute, 2014.
Ovarian Cancer: Three Types

• **Epithelial cell cancer**
  – Starts in the cells that cover the outer surface of the ovary

• **Germ cell tumours**
  – Start in the egg cells within the ovary & generally occurs in younger women/girls

• **Sex Cord Stromal tumours**
  – Start in the connective tissue cells that holds the ovary together
Epithelial Subtypes

- Serous
- Endometrioid
- Undifferentiated
- Borderline
- Clear Cell
- Mucinous
Pathophysiology

- Paradigm Shift in past 7 – 8 years
- Ovarian Cancer begins in the fallopian tubes and falls on to the ovarian epithelial surface
# Ovarian Cancer Risk Factors

<table>
<thead>
<tr>
<th>Increase</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Oral Contraceptive Use</td>
</tr>
<tr>
<td>Positive Family history of Ovarian or Breast Ca</td>
<td>Pregnancy and Breastfeeding</td>
</tr>
<tr>
<td>Infertility/low parity (not bearing children)</td>
<td>Salpingectomy</td>
</tr>
<tr>
<td>Personal cancer history of Breast, Colon or Uterine Ca</td>
<td>Hysterectomy/Removal of Both Ovaries + tubes</td>
</tr>
</tbody>
</table>
### Oral Contraceptives

<table>
<thead>
<tr>
<th>Duration of Use</th>
<th>Decrease in Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL YOUNG WOMEN</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>0</td>
</tr>
<tr>
<td>3 months – 4 years</td>
<td>30-40%</td>
</tr>
<tr>
<td>5 – 9 years</td>
<td>60%</td>
</tr>
<tr>
<td>10 years and greater</td>
<td>80%</td>
</tr>
<tr>
<td>BRCA Carriers</td>
<td>50-60%</td>
</tr>
</tbody>
</table>

Epithelial Ovarian Cancer
Pregnancy and Breastfeeding

<table>
<thead>
<tr>
<th>No of term pregnancies</th>
<th>Decrease in Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>40%</td>
</tr>
<tr>
<td>2</td>
<td>47%</td>
</tr>
<tr>
<td>3</td>
<td>52%</td>
</tr>
<tr>
<td>4</td>
<td>64%</td>
</tr>
<tr>
<td>5</td>
<td>67%</td>
</tr>
<tr>
<td>&gt; 6</td>
<td>71%</td>
</tr>
<tr>
<td>BRCA 1 or 2, or both</td>
<td>12%/birth</td>
</tr>
</tbody>
</table>
Familial Oncology Genetics

- 10% overall risk
- Patients at high-risk
  - +/- Genetic Testing
  - BRCA 1 or 2 mutation
  - Hereditary Non Polyposis Colon Cancer
  - Familial Ovarian/Breast Cancer
  - Ethnicity
  - Personal history of Serous/Endometrioid Ovarian Cancer

- Counseling
  - Breast Cancer risk
  - Screening Programs for breast cancer
  - Prophylactic oophorectomy, hysterectomy & mastectomy
  - Genetic counseling and testing

Epithelial Ovarian Cancer
Hereditary syndromes in Ovarian cancer

- 1) Hereditary Breast Ovarian Cancer Syndrome (causes 90% of hereditary ovarian cancers)
  - BRCA1 & BRCA2 mutations
- 2) Site-Specific Ovarian Cancer
- 3) Hereditary Non-polyposis Colon Cancer (Lynch II)

Hereditary syndromes only account for 10% of epithelial ovarian cancers
BRCA mutations and ethnicity

- 4 founder mutations among Ashkenazi Jews
  - Prevalence 1 in 40

- Other groups with BRCA1/2 mutation families:
  - French-Canadian
  - Mennonite
  - Icelandic
  - Scandinavian

Epithelial Ovarian Cancer
BRCA 1 Hereditary Breast and Ovarian Cancer

Breast cancer 85%

Second primary breast cancer 40%-60%

Average Risk of Ovarian Cancer
Up to Age 50 BRCA1 20%
General Pop 1.7%

Average Risk of Ovarian Cancer
up to Age 80 BRCA1 50%
General Pop 1.4%
BRCA2 Hereditary Breast and Ovarian Cancer

Breast cancer (30%-85%)

Ovarian cancer (10%-20%)

Male breast cancer (6.7%)

Average Risk of Ovarian Cancer up to Age 50
BRCA2 3%
General Pop 1.7%

Average Risk of Ovarian Cancer up to Age 80
BRCA2 20%
General Pop 1.4%
### Red Flags

<table>
<thead>
<tr>
<th>BRCA 1 and 2 mutations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast cancer prior to age of 50</td>
</tr>
<tr>
<td>Ovarian cancer at any age</td>
</tr>
<tr>
<td>Multiple primary cancers</td>
</tr>
<tr>
<td>Ashkenazi Jewish ancestry</td>
</tr>
<tr>
<td>Relatives of a BRCA mutation carrier</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HNPCC (Lynch II)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onset of colorectal cancer before age 50</td>
</tr>
<tr>
<td>Onset of endometrial cancer before age 50</td>
</tr>
<tr>
<td>Two or more HNPCC cancers in an individual or family</td>
</tr>
</tbody>
</table>
Signs and symptoms

- Bloating, increased abdominal girth
- Pelvic or abdominal pain
- Dyspepsia, indigestion, early satiety
- Urinary symptoms (urgency or frequency)
- Muscle wasting of extremities/face
- Fatigue
- Gas, change in bowel habits
- Rectal/bladder pressure
- Unusual vaginal bleeding
- Weight loss or weight gain
- SOB on exertion or at rest

*June 2007 ACS, SOGC (US), GCF, IGCS  Epithelial Ovarian Cancer
Symptoms: exfoliation and implantation of cancer cells on surfaces of peritoneal cavity

- Ovarian cancer cells shed from original site in the ovary and land anywhere on lining of pelvic abdominal peritoneum, causing:
  - Ascites
  - Bowel Obstruction
  - Pleural Effusion

Most problems relate to the abdominal area where the disease tends to stay

Epithelial Ovarian Cancer
Diagnosis

- Adnexal mass found on physical exam
- Relatively immobile and painless
- Irregular
- Solid or mixed solid and cystic components

Rectovaginal Exam

Transvaginal ultrasound
CA-125 blood test

Epithelial Ovarian Cancer

www.g-o-c.org
Diagnosis

- Imaging studies (ultrasound, CT, MRI)
- Blood tests (CA-125)
- Biopsy of omental cake or other solid lesions
- Analysis of peritoneal fluid (ascites) or pleural fluid
Risk of Malignancy Index

- Formula used to calculate risk of malignancy for pelvic mass
- RMI= U/S score x menopausal score X CA125 value

<table>
<thead>
<tr>
<th>Ultrasound features</th>
<th>RMI II Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multilocular cyst</td>
<td>1=no or one abnormality</td>
</tr>
<tr>
<td>Presence of solid areas</td>
<td>4=two or more abnormalities</td>
</tr>
<tr>
<td>Bilateral lesions</td>
<td></td>
</tr>
<tr>
<td>Ascites</td>
<td></td>
</tr>
<tr>
<td>Presence of intrabdominal mets</td>
<td></td>
</tr>
<tr>
<td>Premenopausal</td>
<td>1</td>
</tr>
<tr>
<td>Postmenopausal</td>
<td>4</td>
</tr>
<tr>
<td>CA 125</td>
<td>u/mL</td>
</tr>
</tbody>
</table>
CA-125

- A mucin-like glycoprotein that increases in response to disturbances of the peritoneal surface
- Known as a tumor associated antigen
- In patients <50 years of age an elevated CA-125 is associated with a malignant mass <25% of the time
- In patients >50 years of age this association increase to 80% of the time
- Is **not** a screening or diagnostic test
- Nonspecific tumour marker with variations in interpretation depending on the patient’s medical history & age
- Level does not correlate with burden of disease
- False positive & negative results
CA-125

- **Non Malignant Conditions That May Elevate CA-125 Concentrations**

<table>
<thead>
<tr>
<th>Gynecologic</th>
<th>Non-Gynecologic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute PID</td>
<td>Active hepatitis</td>
</tr>
<tr>
<td>Adenomyosis</td>
<td>Acute pancreatitis</td>
</tr>
<tr>
<td>Benign Ovarian Growth</td>
<td>Chronic liver disease</td>
</tr>
<tr>
<td>Endometriosis</td>
<td>Cirrhosis</td>
</tr>
<tr>
<td>Functional ovarian cyst</td>
<td>Congestive Heart failure</td>
</tr>
<tr>
<td>Menstruation</td>
<td>Diverticulitis</td>
</tr>
<tr>
<td>Ovarian hyperstimulation</td>
<td>Pericarditis</td>
</tr>
<tr>
<td>Unexplained infertility</td>
<td>Pneumonia</td>
</tr>
<tr>
<td>Uterine Myoma</td>
<td>Postoperative period</td>
</tr>
<tr>
<td></td>
<td>Renal Disease</td>
</tr>
<tr>
<td></td>
<td>Polyarteritis nodosa</td>
</tr>
<tr>
<td></td>
<td>SLE</td>
</tr>
</tbody>
</table>

Epithelial Ovarian Cancer
Spread of Ovarian Cancer

Epithelial Ovarian Cancer
Medical Management Includes

- Awareness of multisystem dysfunction
  - Peritoneal Ascites
  - Pleural Effusions
  - Bowel Obstructions
  - Malnutrition
  - Side Effects from Chemotherapy
  - Blood Clots (VTEs or CAT)
  - Pain Management
  - Psychosocial Care
Treatment of Ovarian Cancer

- Surgery
- Chemotherapy
  - Neo-adjuvant
  - Adjuvant
- Clinical trials
- Palliative care

Epithelial Ovarian Cancer
Goals of Care

• Communication & Education
  – Patient’s goals & expectations
  – Incorporate combination of interventions
  – Improve QoL
    • Alleviation of symptoms
      – Managing GI side effects/complications presents unique challenges
      – Support active & functional life
  – Obtain benefits of therapy
  – Optimize interventions & monitoring

Epithelial Ovarian Cancer
Role of Neoadjuvant Chemotherapy vs. Primary Debulking

- Majority of patients present with advanced disease (Stage 3C/4)
- Goal of surgery is complete resection of all macroscopic disease
- Surgery has been standard of care as primary treatment of ovarian cancer however advanced disease presents challenges as patients considerably sicker
- Primary cytoreductive/debulking surgery is associated with higher complications including:
  - Post op infections
  - Venous complications
  - Fistulae
  - Hemorrhage
  - Postop mortality/morbidity

Vergote, Gynecologic Oncology, 2010, 119(1), 1-2
Role of Neoadjuvant Chemotherapy vs. Primary Debulking

- Neoadjuvant chemotherapy (3 cycles) followed by interval debulking surgery found not to be inferior to primary debulking
- Only patients with Stage 3C or 4 should be considered for neoadjuvant chemo
- Postop complications and mortality rates were decreased after neoadjuvant chemo vs primary debulking
- Overall survival and progression free survival similar between two groups

Vergote, Gynecologic Oncology, 2010, 119(1), 1-2
Procedures Required For Surgical Staging of Ovarian Cancer

- Surgery is the main diagnostic tool for Ovarian Cancer.

**PROCEDURES REQUIRED FOR SURGICAL STAGING OF OVARIAN CANCER**

- Scraping of the underside of the right diaphragm
- Removal of the para-aortic lymph nodes
- Removal of the pelvic lymph nodes
- Ovarian tumor
- Uterus
- Cervix
- Vagina

Epithelial Ovarian Cancer
Surgical Management

• Based on the spread pattern of ovarian cancer
• Operation: Total abdominal hysterectomy, bilateral salpingo-oophorectomy with staging, pelvic lymph node dissection, omentectomy and debulking
• Two goals of surgery:
  – Diagnose
  – Stage
  – Remove all gross disease
    • Disease completely resected ↑ survival outcomes
    • Incomplete resection, goal is to ↓ tumour burden (Poorer prognostic factor)
Definition of Terms

• **Omentectomy**: The surgical removal of a sheet of fat that is located under the fascia, attached to the bottom edge of the stomach and liver.

• **Staging**: The process of obtaining specimens intra-operatively to determine the spread of ovarian cancer which determines the stage of ovarian cancer the patient has.

• **Debulking**: The removal of all visible tumor that can be safely removed without damaging major organs.
The Importance of Specialty Care

- % Comprehensive Staging
  - 35% General Surgeon
  - 52% OB/Gyn
  - 97% Gyn/Onc

- Studies have shown Gynecologic Oncologists have higher rates of complete and “optimal resection” of ovarian cancer at initial surgery and are more likely to perform comprehensive surgical staging as well as provide care that results in 25% improved survival for women as compared to Ob/Gyn and General Surgeons.

- **Source:** Junor et al, Brit J Ob/Gyn, 11/99
- **McGowen et al Ob/Gyn 1985**
Epithelial Ovarian Cancer
Advanced Disease

• Patients with advanced disease can achieve complete remission
  – >80% of those who completely respond to chemotherapy eventually relapse

• 5 year survival is related to volume of residual disease
  – 40-75% if microscopic (no residual disease)
  – 30-40% if macroscopic (<1-2cm residual disease)
  – 5% if suboptimally debulked (>1-2cm)

Bhoola & Hoskins, 2006
FIGO Staging


Updated FIGO staging Jan 1, 2014
Postoperative care pain management options

PCA

Epidural

Grass, 2005
PCA (Patient controlled analgesia)

- Infusion pump with opioids available
- When patient experiences pain, they can push a button and PCA will administer controlled amount of opioids intravenously
- Has advantages/disadvantages
- Prescriber orders type and dose of opioid, allotting timing for injection availability and lock out period to prevent over dose or adverse effects (respiratory depression)
- Each institution has its own training specific to PCA use
Epidural Pain Management

• **Analgesia:**
  - Agents diffuse across meninges & CSF & into neural tissue of cord to act on analgesic receptors of the dorsal horn; systemically by the epidural vasculature & across the dura to penetrate the cord

• **Local Anesthetics:**
  - Agent diffuse from epidural space to nerve roots, blocking impulse conduction
  - Lower concentrations usually block transmission of pain & temperature along sensory fibers without blocking the transmission of touch, pressure or motor impulses

• Frequently a combination of opioid and local anesthetic is used, reducing the total amount of each agent required to relieve pain
• Side effects: pruritis, increased susceptibility to UTI, prolonged hospitalization
Chemotherapy

- Intravenous chemotherapy with Carboplatini & Paclitaxel is the standard of practice for epithelial ovarian cancer.
- Chemotherapy is given
  - Cure
  - Control disease
  - Palliate symptoms

Epithelial Ovarian Cancer
Intraperitoneal Chemotherapy

- Exfoliation of cells implant on surfaces of peritoneal cavity
- IV Taxol 135 mg/m² for 24 hrs day 1 and IP Cisplatin 100 mg/m² day 2 and IP taxol 60 mg/m² day 8 every 21 days for 6 cycles.

Epithelial Ovarian Cancer
Intraperitoneal Chemotherapy

- National Cancer Institute & Gynecologist Oncologist of Canada
  - IP chemotherapy for patients with newly diagnosed stage III, optimally debulked ovarian cancer
- Armstrong et al. (2006) GOG 172 Clinical Trial
  - IP chemotherapy improves progression-free survival (PFS) & overall survival
Improvements in staging, cytoreductive surgery and adjuvent therapies have improved 5 year survival
Paclitaxel

- Often given in combination with Carboplatin
- Has potential for hypersensitivity reactions, pts need to be premedicated with steroids
- Indicated for patients with ovarian cancers, cervical cancers and endometrial cancers.
- Potential side effects:
  - Alopecia
  - Mucositis
  - Myelosuppression
  - Myalgia, arthralgia
  - Peripheral neuropathy
  - Visual disturbances
  - Ototoxicity
  - Diarrhea
  - Nausea, vomiting

  - Neutrophil nadir—Day 10-12
  - Platelet nadir—Day 8-9
  - Cardiovascular—hypotension, bradycardia, hypertension
  - Injection site reactions—erythema, tenderness, skin discoloration, swelling—extravasation
  - Elderly patients have more myelosuppression, neuropathy and cardiovascular toxicities
Carboplatin

- Usually infused over 60 minutes.
- Often given in combination with Taxol.
  - Taxol should be given before Carboplatin to increase efficiency and limit myelosuppression.
- Indicated for patients with ovarian cancers, cervical cancers and endometrial cancers.

*Side effects:* -↓Na, ↓Mg, ↓Ca, ↓K
  - Vomiting
  - ↑ Creatinine
  - ↑ liver function
  - Myleosupression (Neutropenia/thrombrocytopenia)
  - Neuropathies
  - Ototoxicity
  - Potential allergic reaction (typically in 2nd line)
Hypersensitivity Reaction (HSR)

• “An exaggerated or inappropriate immune response that may be localized or systemic, occurring during or within hours of a drug administration.”
• Can be prevented with:
  – ↑ steroids
  – Ranitidine
  – Benadryl
  – Longer infusion time

Polovich, White & Kelleher, 2005, p78
Cisplatin

• Pre-treatment hydration **VERY** important before Cisplatin.

• Compatible with NS (normal saline)

Side effects:

- Significant nausea and vomiting
  - Myelosuppression
  - Nephrotoxicity
  - ↓Mg
  - Neurotoxicity and autotoxicity
Peglated Lipsomal Doxorubicin

- **Anthraclycline**
- Molecules of the drug are enclosed (encapsulated) in a fatty coating known as liposome
  - The liposome allows the doxorubicin to remain in the body for longer so that a greater amount of chemotherapy is delivered to the cancer cells, while having fewer side effects on healthy tissue
- Cumulative dose
- Sore mouth and ulcers
- Skin changes
  - Soreness and redness of the palms of hands & soles of feet (PPE—Palmar plantar erythema)
- Cardiomyopathy
  - Echo or MUGA scan
Topotecan

- Used as second line chemotherapy option in platinum sensitive disease
- Common side effects:
  - Neutropenia, thrombocytopenia, anemia, myelosuppression
  - Neutrophil nadir—Day 12-15
  - Platelet nadir—Day 15
  - Neutropenic colitis (typhilitis)—life threatening condition, caused by transmural inflammation of the cecum, ascending colon and ileum—consider if pts present with fever, neutropenia and abdominal pain
  - Nausea/vomiting
  - Diarrhea, constipation
  - Rash
  - Alopecia
Gemcitabine

- **Salvage Therapy** for patients with disease recurrence
- Side effects:
  - Myleosuppressive—leukopenia, anemia, thrombocytopenia
  - Leg swelling
  - Pulmonary side effects (pulmonary edema, interstitial pneumonitis, pulmonary fibrosis)
  - Increased number of visits and infusions (Day 1, 8, 15 q21 days)
Nursing considerations for chemotherapy

• **Neutropenia**
  – Decreased production of white blood cells
  – Severe neutropenia occurs when patients neutrophil count is $<0.5 \times 10^9$
  – Chemotherapy is postponed if neutrophils are $<1.5 \times 10^9$
  – Consideration of G-CSF products or does reduction/delay
  – Occurs at time of nadir
    • (7-10 days post chemo)
Nursing considerations for chemo administration

- Neutrophils must be $> 1.5 \times 10^9$ to proceed with chemo
- Neutrophil count $< 1.0 - 1.4 \times 10^9$ -- Individualized consideration by physician/centre policy about administration
- Neutrophil count $< 1.0 \times 10^9$, chemo delayed
Nursing considerations for chemotherapy

• **Anemia**
  – Low red blood cell count
  – Normal Hgb 120-160 g/dL
  – Chemotherapy can still be given if patient anemic and patient is asymptomatic
  – Blood transfusion if symptomatic
    • SOB
    • Extreme fatigue
    • Heart palpitations/vertigo
Nursing considerations for chemotherapy

• Thrombocytopenia
  – Decreased platelet count under $100 \times 10^9$
  – Normal 140-440 $\times 10^9$
  – Signs of low platelet count: bleeding or bruising more easily.
  – Management
    • Delay treatment
    • Potential platelet transfusion
    • Advise patient of signs/symptoms
Nausea & Vomiting

1. CENTRAL PATHWAY
   - Brainstem Emetic Control Center (or Dorsal Vagal Complex)
   - Nucleus Tractus Solitarii
   - Area Postrema (Chemosensitive Trigger Zone)
   - Dorsal Motor Nucleus of Vagus Nerve

2. VAGAL PATHWAY
   (Supplemented with Splanchnic Nerves)
   - 2a. GI Tract
   - 2b. Higher centers – smell, vision, etc.
   - 2c. Pharynx

3. VESTIBULAR PATHWAY
   - Vestibulocochlear Nerve

https://www.cancercare.on.ca/CCO_DrugFormulary/Pages/FileContent.aspx?fileId=97473
Taste Changes & Nutritional Alterations

- Chemotherapy drugs most commonly associated with taste changes include
  - Carboplatin
  - Cisplatin
  - Paclitaxel
- Loss of appetite
- Mouth care
- Mucosal inflammation
- Eating takes effort
- Consider switching to plastic cutlery (Metal Taste)
- Cachexia
  - A state of malnutrition & protein (muscle) wasting

https://www.cancercare.on.ca/CCO_DrugFormula ry/Pages/FileContent.aspx?fileId=154808
Mucositis (stomatitis)

- Mouth sores--Causes swelling, pain, leads to malnutrition and dehydration.
- Patient could obtain a prescription for magic mouthwash

Source: [CancerCare Ontario](https://www.cancercare.on.ca/CCO_DrugFormulary/Pages/FileContent.aspx?fileId=154819)
Peripheral Neuropathy

- Any injury, inflammation, or degeneration of the peripheral nerves (Almadrones, Armstrong, Gilbert & Schwartz, 2002)
- Many contributing factors
- **Taxanes & Platinum analogs**
  - PN enhanced by other factors, including cumulative dose, rapid infusion times, high single dose, & prior or concurrent use of other neurotoxic drugs or agents
  - Incidence estimated at 3-7% single agent & up to 38% with multiple agents
- **Quality of Life Issues**
  - Painful (burning, sharp, stabbing, electric), numbness, tingling, weakness, sensory loss, perception of wearing a sock or glove, muscle weakness & loss of dexterity/coordination
  - Strategies to alleviate symptoms & prevent injury
Constipation

- Insufficient or irregular evacuation of the bowels
- Symptoms:
  - Anorexia, nausea/vomiting, colicky abdominal pain, bloating, tenesmus
- Encourage patient to:
  - add fiber to their diet, drink plenty of water, increase physical activity
- Review use and indication of laxatives (stool softeners, stimulants etc).

https://www.cancercare.on.ca/CCO_DrugFormulary/ Pages/FileContent.aspx?fileId=154797
Diarrhea

- Excessive and loose bowel movements
- Can lead to:
  - Dehydration
  - Electrolyte imbalances
  - Skin breakdown
- Management
  - Drink plenty of water and add electrolyte sports drinks
  - Eat small frequent meals (BRAT diet)
  - Avoid foods that are high in fat/fiber
  - Stop laxatives!
Fatigue

• Overwhelming & sustained exhaustion & ↓ capacity for physical and/or mental work

• Most common complaint related to:

<table>
<thead>
<tr>
<th>-cancer itself</th>
<th>-dehydration</th>
</tr>
</thead>
<tbody>
<tr>
<td>-cancer treatment</td>
<td>-environmental</td>
</tr>
<tr>
<td>-anemia</td>
<td>-depression</td>
</tr>
<tr>
<td>-chronic pain</td>
<td>-insufficient sleep or rest</td>
</tr>
<tr>
<td>-stress</td>
<td>-inadequate nutritional intake</td>
</tr>
</tbody>
</table>
Anxiety/depression

• Anxiety—a feeling of fear or nervousness
• Depression—a serious medical condition where a person feels sad/hopeless
• ESAS and Distress Thermometer given to patients at each visit.
• Refer appropriately to services such as Psychosocial Oncology

https://www.cancercare.on.ca/cms/one.aspx?portalId=1377&pageId=156540
Hair loss (alopecia)

- Complete loss of hair on body including head, eyelashes, eyebrows, arms, legs, nose etc.
- Duration for the length of the treatment. It is not permanent.
- Regrowth is usually 2-4 months after chemotherapy
- May regrow back slightly different in color and texture.
- *Look Good Feel better Program* and *CanSupport*
Fertility

• Loss of the ability to have children
• May be related to the chemotherapy, surgical procedure, age and general health status.
• Important to discuss this with patient as early as possible and offer appropriate support
• Emphasize birth control measures for young women with functioning ovaries
• Consider referral to fertility specialist
  - http://fertilefuture.ca/
Recurrence

- 75% of patients recur (not curable at this point)
- Platinum refractory (progresses on treatment)
- Platinum resistant (recurs less than 6 months after completing prior chemotherapy treatment)
- Platinum sensitive (recurs more than 6 months after completing prior chemotherapy treatment)
- Encourage clinical trials
- 2nd line therapies (not curative) Caelyx, gemcitabine, etoposide, topotecan, taxanes, vinorelbine
- Median survival time is 2 years for women with bulky disease to more than 5 years for those with small volume disease. Fewer than 50% of women survive 5 years after the diagnosis
Carcinomatosis
Specific Issues

• Decision to start treatment made on a case by case basis because no survival advantage to starting chemotherapy when patient is asymptomatic
• Can be viewed more as a chronic illness
• May go through repeated cycles of aggressive chemotherapy with little respite
• Symptom management and good palliative care
Common Symptoms Experienced by Women with Recurrent Ovarian Cancer

• Abdominal Changes (Bowels & Ascites)
  – Cramping
  – Bloating
  – Swelling
  – Pressure/Heaviness/Tightness
  – Distended hard abdomen
  – Constipation
  – Diarrhea
  – Indigestion
  – Nausea

• Bankhead, Kehoe, Austoker, 2005; Fitch, Gray & Franssen, 2000; Fox & Lyon, 2007; Lockwood-Rayermann, 2007
Ascites

- Tumor implants block or impede normal peritoneal lymph flow
- Peritoneal surfaces produce an increased amount of fluid
- Symptoms of early satiety, anorexia, indigestion, decreased bowel motility, constipation and decreased bladder capacity. Abdominal skin becomes taut and shiny
Assessing for Ascites
Treatment for Ascites

1) Paracentesis

2) Non-invasive

- **Diet:**
  - Frequent, small meals high protein, low sodium.
  - Decrease total fluid volume

- **Rest** (on left side, feet elevated)
  - Alleviate pressure on internal organs,
  - Improve vascular return from lower extremities
  - Facilitate lymphatic flow
  - Improve diuresis
Pleural Effusion

• Flow of pleural fluid from the parietal pleura to the visceral pleura is impaired.
• Carcinomatous involvement of the parietal and/or visceral pleura, these membranes suffer an inflammatory response and injury with resulting increased output and accumulation of fluid in the pleural space.
• Symptoms shortness of breath, hypoxia, pleuritic chest pain and cough
Thoracentesis

- Chest tube
- Sclerosing the pleural cavity (pleurodesis) The goal of this therapy is to obliterate the pleural space through fibrosing (scarring) the tissues, thus preventing reaccumulation of fluid.
Malignant Bowel Obstruction

- Progressive growth of tumor on or near the bowel
- May be small (acute) or large bowel obstruction
- Symptoms nausea, vomiting, abdominal pain and cramping, diarrhea or constipation
- Both may require bowel diversion (ileostomy/colostomy)
MBO - Incidence

- Overall incidence of MBO with advanced cancer is 3%.
- The incidence of MBO in ovarian cancer patients is between 5 to 42%.
- Incidence of MBO in GI cancer patients is 4 to 24%.
- Other cancers such as breast, lung, or melanoma also have the ability to spread to the abdomen and cause MBO. Incidence for each cancer is not explicitly described in the literature.
MBO – Where does it occur?

- Small bowel is more commonly involved than the large bowel (61% vs. 33% respectively)

MBO is multifocal in 76% cases
Why is MBO important for Nurses to discuss?

- Physical Symptoms:
  - Pain (60% of pts.)
  - Nausea (60 – 70% pts.)
  - Vomiting
  - Cramping/borborgami
  - Change in BM (none or thin/diarrhea)
- Complex management
  - Anticipate interventions
- The bigger picture:
  - MBO can be a terminal condition
  - In the setting of carcinomatosis median survival is <3 months
CONTINUOUS PAIN
Exacerbated by tumor mass

Pathophysiology of MBO

Contributing factors:
• Bowel edema
• Fecal impaction
• Constipating drugs
• Hypokalemia

Partial or Complete Bowel Obstruction

Reduction or Stop of through-movements of intestinal contents

Bowel Distension leads to:
• Of lumen area
• Gut epithelial surface
• Bowel Secretions of water Na

NAUSEA & VOMITING

Ripamonti 2007
Signs and Symptoms of MBO

Most common symptoms experienced by patients with MBO:

- Intestinal colic 72-76%
- Abdominal pain 92%
- Vomiting 68-100%

<table>
<thead>
<tr>
<th>Location</th>
<th>Signs and Symptoms</th>
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<tbody>
<tr>
<td>Small Intestine</td>
<td>Colicky pain</td>
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<tr>
<td></td>
<td>Constant pain with complete strangulation and infarction</td>
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<tr>
<td></td>
<td>Vomiting</td>
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<tr>
<td></td>
<td>Severe dehydration</td>
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<tr>
<td></td>
<td>Minimal or absent distension</td>
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<tr>
<td>Lower Small Intestine</td>
<td>Less acute presentation</td>
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<tr>
<td></td>
<td>Moderate vomiting</td>
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<tr>
<td></td>
<td>Dehydration</td>
</tr>
<tr>
<td></td>
<td>Some distension</td>
</tr>
<tr>
<td></td>
<td>Lack of feces or flatus</td>
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<tr>
<td></td>
<td>Severe electrolyte imbalances</td>
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<tr>
<td>Large Intestine</td>
<td>Insidious</td>
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<tr>
<td></td>
<td>Pronounced distention</td>
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<tr>
<td></td>
<td>Lack of feces or flatus</td>
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<tr>
<td></td>
<td>Overflow diarrhea</td>
</tr>
<tr>
<td></td>
<td>Vomiting</td>
</tr>
</tbody>
</table>
Consequences of Bowel obstruction

- Metabolic disorders/malnutrition
- Renal failure
- Electrolyte instability
- Strangulation/perforation of the bowel
- Compromised mucosal blood flow with potential for translocation of endotoxins across the bowel wall
Management: ACUTE

- NPO
- Hydration (IV fluids or SC)
- NG tube

TPN – only considered in patients who would have a clinical or life-extending benefit - it is not recommended for terminally ill patients
MEDICAL Management

• **Goal:** relieve symptoms of nausea, vomiting, pain and dehydration
  – Try to reverse bowel obstruction

  ▪ Important to differentiate between partial and complete obstruction as prokinetic agents are inappropriate in **complete bowel obstruction**

  ▪ Parenteral routes must be used as absorption orally is variable and not predictable
Symptom control: Pain in MBO

- Analgesics should not be avoided for fear of aggravating the obstruction
- Choice of medication and dosage are titrated based on effect
- If colicky pain persists despite the use of an opioid, Buscopan may be a useful adjuvant

Analgesics: WHO GUIDELINES

1. Non-opioid +/- Adjuvant
2. Opioid for mild to moderate pain +/- Non-opioid +/- Adjuvant
3. Opioid for moderate to severe pain +/- Non-opioid +/- Adjuvant
Surgical management

• Surgery is considered for unifocal bowel obstruction and each patient should be evaluated to see if they are a surgical candidate

• **Purpose:** palliate symptoms of obstruction by:
  - stoma formation,
  - bypassing the obstruction
  - resecting a portion of bowel
  - placement of colorectal stent

• Post-op morbidity 5 – 90%
• Post-op mortality
Surgical management

- Surgical complications include:
  - Entero-cutaneous or entero-vaginal fistula
  - Anastomosis leaks
  - Short bowel syndrome
  - DVT/PE
  - GI Bleed
  - Sepsis
- Suitability for surgery should be assessed to justify any surgical intervention – this includes assessing the general condition of the patient, evidence of mechanical obstruction, reasonable expectation of survival and quality of life. (Alberta Cancer Board, 2001, p. 46).

- Guidelines to direct which patients with MBO are surgical candidates are not clear
- Parameters suggesting surgery is inadvisable include: ascites ≥ 3 L, a palpable abdominal mass, pre-operative weight loss >9 kg, carcinomatosis, previous RT
- Rate of inoperable cases in patients with MBO is 6.2% to 50%
Percutaneous Endoscopic Gastrostomy (PEG) Tube

• An alternative to NGT in patients whose symptoms are refractory to pharmacologic measures
• Achieves intestinal decompression
• Complications from PEG tubes include tube obstruction requiring replacement, digestion of surrounding skin, abscess formation, pain when the tube is inadvertently tugged
Nursing Considerations for patients with MBO

Acute Care
- Oral and nasal care are essential
- Assess hydration
- Vital signs, fluid balance (In and Out)
- Monitor control of pain, nausea and emesis

If patient is a surgical candidate
- Stoma care – involvement of the Enterostomal nurses
- Psychosocial support surrounding body image, reaction to cancer
- Special instructions for colorectal stent
- Homecare for continued support in the community
- Anticipate future treatments for the cancer - chemotherapy

If patient is not a surgical candidate
- Anticipate medical modalities, side effect profiles and rationale for use
- Psychosocial support for the patient and family will be essential
- Care for the patient may involve Palliative care, Spiritual resources
- Discharge coordination to hospice or home
Nursing care for the Whole person

- Inability to eat
- Alteration in activity
- Deterioration of mental abilities
- Social isolation
- Waiting
- Lack of direction
- Personal reflection

Every patient indicated that nursing staff could be a major source of support, providing an opportunity to reflect on their situation and meaning of the illness.
Radiation Therapy

- The use of high-energy x-rays to destroy cancer cells
- May be used to relieve side effects of progressive cancer in select cases (isolated pelvic/vaginal vault recurrence)
- Side effects of treatment
  - Fatigue
  - Mild skin reactions
  - Nausea
  - Diarrhea
  - Cystitis
  - Vaginal stenosis
  - Skin integrity

www.g-o-c.org
Clinical Trials

• Provide novel treatments that show promise in treatment of ovarian cancer
• Available clinical trials should always be presented as an option to eligible patients
Nursing Management

• Therapeutic Communication
  – Attentive Listening
• Understanding of disease process—from diagnosis to palliation
• Be sensitive to patient changes
• Encourage your patient and/or family to express their feelings
• Promote a therapeutic environment
• Assist in adapting to new body changes
• Collaborate with other professionals
• Care for the “Caregiver”
References


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