Ovarian Cancer: Treatment and Prevention

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How Common is Ovarian Cancer?
How Common is Ovarian Cancer?

• Ovarian cancer in the United States
  • 1:70 lifetime risk in general population*
    *Some populations are at much higher risk

Compared to...

• Breast cancer
  • Most common women’s cancer
  • Over 225,000 new diagnoses in 2012 in US
  • Nearly 40,000 will die of disease in 2012
  • Lifetime risk: 1:6 women will develop breast cancer

**Some women are at high risk for both ovarian and breast cancer**
The Diagnosis of Ovarian Cancer*

*The following section also applies to Primary Peritoneal Carcinoma and Fallopian Tube Carcinoma—all are treated the same
Ovarian cancer
Ovarian Cancer—Diagnosis

• Signs and symptoms
  • Early symptoms vague
    • Lower abdominal discomfort, pressure
    • Lack of early detection methods

• Symptoms in advanced stage
  • Abdominal distention
  • Bloating
  • Bowel and bladder symptoms
  • Nausea, anorexia, early satiety
  • Low back pain
  • Bowel obstruction
Ovarian Cancer Symptom Index

1. Bloating/increase in abdominal size
2. Pelvic/Abdominal Pain
3. Difficulty Eating/Feeling full quickly
4. Frequent or urgent urination

Sensitivity 56.7% for early-stage disease; 79.5% for advanced-stage disease.

Specificity 90% for women age >50 years; 86.7% for women age <50 years.
Ovarian Cancer Work-Up

• Physical exam
  • Can sometimes feel a pelvic mass, abdominal mass on exam, abdominal fluid

• CA-125 level (normal is <35 U/mL)

• Imaging
  • Pelvic ultrasound—can show ovarian/adnexal mass
  • CT abdomen/pelvis—usually gives more global intra-abdominal information
  • MRI and PET/CT occasionally used as well
CT of the Pelvis

Ovarian cancer
The Management of Ovarian Cancer*

*Surgery followed by Chemotherapy
Goal: Cytoreduction to minimal residual disease

Surgery

Omentum location

Para-aortic nodes

Pelvic nodes

Via midline abdominal incision
Chemotherapy

• **Very rare** that surgery alone is used
  - Only stages IA and IB, grade 1 and sometimes grade 2, completely-staged (<10% of all ovarian cancers)

• First-line chemo for primary cases:
  - PLATINUM and TAXANE based chemo
    “Carbo/Taxol”
  - Can be given IV or IP (intraperitoneal)
  - Can be given q3 weeks or weekly (“dose-dense”)

• Open clinical trials should be considered as standard treatment due to high cancer recurrence rate

Prevention of Ovarian Cancer*

*Who is at risk for ovarian cancer?
Which Women are at High Risk for Ovarian (and Breast) Cancer?

• Women with a family history
  • Up to 10% of ovarian cancers are caused by BRCA mutations

• 15-20% of breast cancer is familial
• 5-10% of breast cancers due to inherited gene
• Up to 3% of breast cancers are caused by BRCA mutations
**Lifetime Cancer Risk**

**BRCA1**
- 50-80%
- 35-60%

**BRCA2**
- 40-60%
- 10-30%

**General Population**
- 1.4%
- 12%
Could I have a BRCA mutation?

- Family history is important!
  - 2 or more women with ovarian or breast cancer before the age of 50
  - Breast and ovarian cancer in the same woman
  - Male breast cancer
  - Ashkenazi Jewish women with breast cancer before age 50

- BRCA prevalence in women not of Ashkenazi descent: 1:800

- BRCA prevalence in women of Ashkenazi descent: 1:40
Risk-Reducing Measures—Ovarian cancer

Ovarian Cancer Risk with BRCA1

<table>
<thead>
<tr>
<th>Measure</th>
<th>% Lifetime Risk</th>
</tr>
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<tbody>
<tr>
<td>No mutation</td>
<td>1.5</td>
</tr>
<tr>
<td>No measures</td>
<td>49.5</td>
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<tr>
<td>OCP 5yrs</td>
<td>22.3</td>
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<tr>
<td>Hysterectomy</td>
<td>34.7</td>
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<tr>
<td>Tubal ligation</td>
<td>34.7</td>
</tr>
<tr>
<td>Salpingectomy</td>
<td>24.8</td>
</tr>
<tr>
<td>Salpingo-oophorectomy</td>
<td>2.5</td>
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Lynch Syndrome

- Also called “Hereditary Non-Polyposis Colon Cancer” (HNPCC)
- Increased risk of endometrial, ovarian, colon, urinary tract, GI tract cancers
  - Ovarian cancer risk: 3-14% lifetime
  - Endometrial cancer risk: 27-71% lifetime
- Risk-reducing surgery recommended to prevent gyn cancers
- Surveillance prior to surgery: annual endometrial biopsy; pelvic exam, pelvic U/S, CA-125 every 6-12 months
Risk-Reducing Bilateral Salpingo-Oophorectomy: The Most Effective Approach to Preventing Ovarian Cancer
RRSO Dramatically Reduces the Risk of Ovarian Cancer in BRCA Mutation Carriers

**BRCA1**—ovarian cancer risk
- 85% reduction in women who had prior breast cancer
- 69% reduction in women with no prior breast cancer

**BRCA2**—ovarian cancer risk
- 100% reduction in all women, regardless of prior breast cancer status
RRSO Also Reduces the Risk of Breast Cancer in BRCA Mutation Carriers

- Breast cancer
  - BRCA1—37% reduction in first breast cancer
  - BRCA2—64% reduction in first breast cancer
Breast Cancer Surveillance and Risk Reduction Surgery: High Risk Population
Options for Breast Cancer Surveillance

- Monthly breast self-exams (begin by age 18) and
- Early clinical surveillance (begin at age 25)
  - Annual or semi-annual clinical breast exams
  - Annual mammography
  - Annual breast MRI (beginning age 30)
  - Or alternate breast MRI with mammograms every 6 months

Bilateral Prophylactic Mastectomy

- Early data:
  Reduces breast cancer risk by 90-95% in women with a strong family history

- In BRCA mutation carriers:
  - Dramatic reduction in breast cancer risk with 3 years prospective follow-up

<table>
<thead>
<tr>
<th>1693 BRCA carriers</th>
<th>Cancers</th>
</tr>
</thead>
<tbody>
<tr>
<td>247 BPM</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>1372 No BPM</td>
<td>98 (7.1%)</td>
</tr>
</tbody>
</table>

Hartmann NEJM 1999;340:77-84
Domchek JAMA 2010;304(9):967-975
In Summary

1. The signs/symptoms of ovarian cancer can be vague.
2. Ovarian cancer is treated with a combination of surgery and chemotherapy.
3. Ovarian cancer risk is highest in BRCA carriers.
4. There are several ovarian cancer risk reducing strategies.
5. Risk reducing salpingo-oophorectomy is the most effective strategy to prevent ovarian cancer.
Additional Important Points…

• There is **not** an effective screening test for ovarian cancer

• Women with ovarian cancer should be treated by a Gynecologic Oncologist
Thank you!
Helpful Websites for Women and Their Providers

- Minnesota Ovarian Cancer Alliance
  www.mnovarian.org

- Foundation for Women’s Cancer
  www.foundationforwomenscancer.org

- Society of Gynecologic Oncology
  www.sgo.org

- Women’s Cancer Network
  www.wcn.org