Ovarian, Fallopian Tube, Peritoneal Cancer

Louanne Currence, RHIT, CTR

Ovary Facts
- 2 x 3 x 4 cm in size
- 2 million oocytes at birth
- 400 reach egg maturity
- Benign tumors common

Fallopian Tube

Peritoneum
- Thin, serous membrane
- Greater sac: extends from diaphragm to pelvis
- Lesser sac: behind stomach
- Connected thru epiploic foramen
- Female sac not completely closed (communicates with uterine tubes, uterus & vagina)

Lymph Nodes
1. Hypogastric (internal iliac)
2. Obturator
3. Common iliac
4. External iliac
5. Lateral sacral
6. Para-aortic
7. Inguinal

Ovarian Cancer Facts
- "Ovarian" cancer often describes ovary, FT, or peritoneum primary in doctor-speak
- 8th most common CA in women
- Most lethal GYN malignancy
- 5th leading cause female cancer deaths
- Odds are 1:72 of diagnosis occurring
- Only 24% caught early

Source: THI-Interactive, UKCC, 1998
Where's Waldo-ette?
- Research suggests high grade serous cancer probably starts in distal fimbria of FT and spreads to surface of ovary
- Tubal ligation (BTL) may now remove FT rather than tie or band them if no more pregnancy desired

Risk Factors
- Age
- Obesity
- Menstruation – early periods, late menopause, nulliparous or late pregnancy
- Fertility drugs w/o pregnancy
- FH Ovarian cancer 10%
- Breast cancer hx
- Talcum powder
- Estrogen replacement therapy > 10 years
- Smoking/alcohol
- Endometriosis?

Genetic Syndromes (5-10%)
- Hereditary Breast & Ovarian CA Syndrome
  - Younger age
  - BRCA1 4.4% ovarian CA
  - BRCA2 4.5% ovarian CA
  - Just ovarian CA may be subset of BRCA
- Lynch II Syndrome (HNPPC)
  - Ovarian, endometrial, breast, colon, pancreatic
  - Associated with DNA mismatch repair enzyme mutations
- Familial site-specific ovarian cancer

Prevention
- Birth control pills
- Bilateral tubal ligation, hysterectomy
- Pregnancy & breast feeding
- Diet, especially fruits & vegetables
- Aspirin, acetaminophen?

Symptoms
- Abdominal/pelvic pain
- Vaginal bleeding
- Bloating
- Abdominal distension
- Irregular menses
- Change in bowel habit
- Pain during intercourse

PHYSICAL
- Ovarian or pelvic mass
- Ascites
- Pleural effusion
- Abdominal mass or bowel obstruction

Anatomy & Histology
- Origin of three ovarian cancer types
- Struma cells 5-10%
- Germ cells 15-15%
- Epithelium (surface cells) 80%
Society of GYN ONC Recommendations (May 2015)

- Epithelial ovarian cancer pt should undergo genetic testing
- Oral contraceptives can reduce risk
- If increased genetic risk:
  - Removal of ovaries ages 35-40 years
  - If not oophorectomy, consider salpingectomy once thru child-bearing
- If hysterectomy for other health reason, consider salpingectomy

Screening

- Only high risk patients
- Ultrasound
- CA-125

- Screening of every 100,000 women:
  - 40 cases ovarian cancer
  - 5,398 false positives
  - 160+ complications from diagnostic laps

Causes of elevated CA125

- Malignant conditions
  - Gynecologic cancers
    - Epithelial ovarian cancer
    - Some germ cell tumors
    - Some cancers of the tubes
    - Endometrial cancer
    - Endocervical cancer
  - Non-gynecologic cancers
    - Pancreatic cancer
    - Lung cancer
    - Breast cancer
    - Colorectal cancer
- Benign conditions
  - Gynecologic conditions
    - Endometriosis
    - Adenomyosis
    - Leiomyomata uteri
    - Endometriosis
    - Normal pregnancy
    - Pelvic inflammatory disease
    - Menopause
    - Non-neoplastic conditions
      - Pancreatitis
      - Cholecystitis
      - Cholelithiasis
      - Passive liver congestion
      - Pancreatitis
      - Perforated ulcers
      - Peritonitis
      - Recent laparotomy

SEER Stat Fact Sheets

- 5 Year Survival
  - 46.5%

WHO Classification

- Classified by most probable tissue of origin
  - Surface epithelial (65%)
  - Germ cell (15%)
  - Sex cord-stromal (10%)
  - Mets from other site (5%)
  - Misc

- Surface epithelial classified by:
  - Cell type – serous, mucinous, endometrioid, etc.
  - Atypical – benign, borderline, malignant
  - Malignant may be invasive or non-invasive
Benign (80%) vs Malignant
- Age
  - 30 – 44 y.o.
  - 37% benign
  - 15% malignant
  - 94 y.o.
  - 28% benign
  - 63% malignant
- Menopause
  - Pre 60% benign
  - Post 76% malignant
- Worrisome ultrasound characteristics
  - Multiiloculated cysts
  - Solid areas
  - Bilateral lesions
  - Ascites
  - Suspicious for intra-abdominal mets

Low Malignant Potential
- 15% of all epithelial tumors
- 75% stage I
- Stage 2 or 3 w/o gross residual have good survival
- I in ICD-O-3
- To change to /3 MUST have statement by pathologist that it is malignant (not borderline or low malignant potential)
- If reportable-by-agreement cases, should AJCC stage (I0 and /1 in chapter)
- Can recur

WHO Classification
- Serous tumors
  - Cystadenoma (/0)
  - Serous borderline (/1)
  - Serous adenocarcinoma (/3)
- Endometrioid
  - Cystadenoma (/0)
  - Endometrioid borderline (/1)
  - Endometrioid adenocarcinoma (/3)
- Mucinous, endocervical-like, and intestinal types
  - Cystadenoma (/0)
  - Mucinous borderline (/1)
  - Mucinous adenocarcinoma (/3)
- Clear cell
  - Benign (/0), borderline (/1)
  - Clear cell adenocarcinoma (/3)

WHO Classification
- Transitional cell tumors
  - Brenner tumor (/0)
  - Borderline Brenner tumor (/1)
  - Malignant Brenner (/3)
  - Transitional cell carcinoma (non-Brenner - /3)
- Epithelial-stromal
  - Adenosarcoma (/3)
  - Carcinosarcoma
  (formerly mixed Muellerian - /3)

Serous cystadenoma - benign

Papillary serous cystadenocarcinoma
Ovarian Germ Cell Tumors

<table>
<thead>
<tr>
<th>Subtypes</th>
<th>Frequency</th>
<th>Benign</th>
<th>Unifocal</th>
<th>Bifocal</th>
<th>Tumor Markers</th>
<th>Metastasis Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dysgerminoma</td>
<td>35-50%</td>
<td>Malignant</td>
<td>10-15%</td>
<td>Bilateral</td>
<td>LDH, hCG</td>
<td>Lymphatic system</td>
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<tr>
<td>Endodermal sinus tumor</td>
<td>20%</td>
<td>Malignant</td>
<td>Usually unilateral</td>
<td>AFP</td>
<td>Intergenic blood</td>
<td></td>
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<tr>
<td>Embryonal CA</td>
<td>Rare</td>
<td>Malignant</td>
<td>Usually unilateral</td>
<td>AFP and hCG</td>
<td>Intergenic blood</td>
<td></td>
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<tr>
<td>Polyembryoma</td>
<td>Rare</td>
<td>Malignant</td>
<td>Usually unilateral</td>
<td>AFP and hCG</td>
<td>Intergenic blood</td>
<td></td>
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<tr>
<td>Chorocarcinoma</td>
<td>Very rare</td>
<td>Malignant</td>
<td>Usually unilateral</td>
<td>hCG</td>
<td>Intergenic blood</td>
<td></td>
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<tr>
<td>Teratoma</td>
<td>Immature 20% of non-GCT</td>
<td>Benign or Malignant</td>
<td>12-15%</td>
<td>Bilateral</td>
<td>immature can</td>
<td>Intergenic AFP, LDH, CA-125</td>
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<tr>
<td>Mixed GCT</td>
<td>10-10%</td>
<td>Dependent on cells present</td>
<td>Dependent on cells present</td>
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</tr>
</tbody>
</table>

Sex Cord Stromal Cell Tumors

- Granulosa (0/1)
- Sertoli cell (0,1,3)
- Leydig cell
- Sex cord stromal tumors (1/1)
- Fibromas
- Fibrothecomas
- Thecomas
- Steroid (lipid) cell tumors (0/1)

Epithelial Cell Tumors

<table>
<thead>
<tr>
<th>Subtypes</th>
<th>Type of differentiation</th>
<th>Tissue that tumor most closely resembles</th>
</tr>
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<tbody>
<tr>
<td>Serous (50%), usually cystic and solid</td>
<td>Fallopian tube epithelium</td>
<td></td>
</tr>
<tr>
<td>Mucinous (15%), cystic, multiloculated</td>
<td>Gt tract or endocervical epithelium</td>
<td></td>
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<tr>
<td>Endometrioid (10-20%), resemble endometrium, may arise in endometriosis, synchronous withendometrial CA</td>
<td>Proliferative endometrium</td>
<td></td>
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<tr>
<td>Clear cell (5%), many stage I</td>
<td>Gestational endometrium</td>
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<tr>
<td>Transitional cell (Brenner), rare, usually benign</td>
<td>Urinary tract epithelium</td>
<td></td>
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</table>

SINQ Answers

- Granulosa cell tumor NOS/adult NOS = 8620/1
- BUT when metastasis, change to /3
- Low malignant potential ovarian epithelial tumors = /1 EVEN IF peritoneal implants/mets OR mets to LNs
- Mature teratoma ovary 9080/0
- Testes mature teratoma 9080/3

MP/H

<table>
<thead>
<tr>
<th>Rule</th>
<th>Site</th>
<th>Histology</th>
<th>Timing</th>
<th>Primary</th>
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<tbody>
<tr>
<td>M7</td>
<td>Bilateral ovary</td>
<td>Epithelial tumors (8000-8799)</td>
<td>Within 60 days of diagnosis</td>
<td>Single</td>
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</table>

<table>
<thead>
<tr>
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<th>Timing</th>
<th>Primary</th>
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</thead>
<tbody>
<tr>
<td>M10</td>
<td>Diagnosed more than one (1) year apart</td>
<td>Multiple</td>
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</table>

MP/H Histology

<table>
<thead>
<tr>
<th>Rule</th>
<th>Histology</th>
<th>Notes/Examples</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>H16  or H30</td>
<td>Multiple specific histologies or A non-specific histology with multiple specific histologies</td>
<td>Below</td>
<td>The appropriate combination mixed code (Table 2)</td>
</tr>
</tbody>
</table>

The specific histologies may be identified as a type, subtype, predominantly, with features o, major, or with differentiation. Example 1 (multiple specific histologies): GYN malignancy with mucinous, serous and papillary adenocarcinoma. Code 8223 (mixed cell adenocarcinoma)
MP/H Coding – Table 2

<table>
<thead>
<tr>
<th>Column 1: Required Histology</th>
<th>Column 2: Combined With</th>
<th>Column 3: Combination Term</th>
<th>Column 4: Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gyn malignancies with two or more of the histologies in column 2</td>
<td>Clear cell Endometrioid Mucinous Papillary Serous Squamous Transitional (Brenner)</td>
<td>Mixed cell adenocarcinoma</td>
<td>8323</td>
</tr>
</tbody>
</table>

Extra-ovarian Peritoneal
- Resembles ovarian in symptoms, treatment, outcome
- May develop in 5% of women with history of oophorectomy
- 7-20% of epithelial ovarian may actutally be peritoneal primaries
- May be related to BRCA1 or BRCA2
- May be included in clinical trials with Ovarian
- Per AJCC 8th ed., these are either stage III (T3) or Stage IV (M1)
- Synonyms: extratubal peritoneal serous papillary carcinoma, serous papillary carcinoma, multiple focal extraovarian serous carcinoma, primary peritoneal papillary serous adenocarcinoma, serous surface carcinoma of the peritoneum, papillary serous carcinoma of the peritoneum, peritoneal papillary carcinoma

Ovary vs Peritoneum (per SINQ)
- If it is not clear where the tumor originated, use the following criteria to distinguish ovarian primaries from peritoneal primaries:
  - The primary site is probably ovarian, UNLESS:
    - Ovaries have been previously removed
    - Ovaries are not involved (negative)
    - Ovaries have no area of involvement > 5mm.
- Descriptions such as "bulky mass," "omentum caking" probably indicate an ovarian primary.
- Descriptions such as "seeding," "studding," "salting" probably indicate a peritoneal primary.

Krukenberg Tumor
- Mets TO the ovary not FROM
- Mets from other primary, usually GI tract
- Seen around menopause or younger
- Direct vs lymphatic spread
- Usually signet ring cell adenocarcinoma
- 80% bilateral ovaries
- Median survival 14 mos

Fallopian Tube
- Resembles ovarian in symptoms, treatment, outcome
- May be related to BRCA1 or BRCA2
- 1-2% of GYN cancers
- AJCC staging similar to ovary so inc. in 8th ed ovary
- Peak incidence 60-64 years
- 5-year survival
  - 95% stage I
  - 75% stage II
  - 69% stage III
  - 45% stage IV
- Slightly better than ovary

Work-Up for Fallopian Tube Primary
- Pelvic sonogram, CT scans
- CA-125, CBC, chem panel
- GI endoscopy, BE, upper GI series
- FNA, diagnostic paracentesis
- Mammography (rule out mets from breast CA)
Summary Staging

What's in the ... from UCSF & CS

Pelvis
- Adnexae
- Bladder, bladder serosa
- Broad ligament
- Cul-de-sac
- Fallopian tube
- Ovary
- Parametrium
- Pelvic peritoneum
- Pelvic wall
- Rectum
- Sigmoid colon
- Sigmoid mesentery
- Ureter
- Uterus, uterine serosa

Abdomen
- Abdominal mesentery
- Diaphragm
- Gallbladder
- Intrahepatic omentum
- Intestines, large or small
- Kidneys
- Liver (peritoneal surface)
- Omentum
- Pancreas
- Pericolic gutter
- Peritoneum
- Retroperitoneal LN's
- Spleen
- Stomach
- Ureters

0 In situ: Noninvasive; noninfiltrative
Preinvasive

1 Localized only
- Tumor limited to one ovary, capsule intact, no tumor on ovarian surface
  FIGO Stage IA
- Tumor limited to both ovaries, capsule(s) intact, no tumor on ovarian surface
  FIGO Stage IB
- Tumor limited to ovary(ies), unknown if capsule(s) ruptured or if one or both ovaries involved
  FIGO Stage 1b, not further specified

2 Regional by direct extension only
- Implant(s) on ovary(ies)
- Tumor limited to ovary(ies), capsule(s) ruptured
- Tumor limited to ovary(ies) WITH malignant cells in ascites or peritoneal washings
- Tumor on ovarian surface
- FIGO Stage IC

Extension to or implant(s) on:
- Adnexa
- Fallopian tube(s)
- Uterus
- FIGO Stage II A

Extension to or implant(s) on:
- Pelvic tissue
- Adjacent peritoneum
- Ligament(s)
- Broad ligament
- Ovary
- Round ligament
- Sacral peritoneum
- Mesovarium
- Pelvic wall
- FIGO Stage II B

More REG by DE

Extension to pelvic tissues or pelvic wall WITH malignant cells in ascites or peritoneal washings
- FIGO Stage I C

Extension of discontinuous metastasis*** to:
- Bladder
- Bladder serosa
- Culp de sac (rectouterine pouch)
- Fallopian tubes
- Rectosigmoid
- Rectum
- Sigmoid colon
- Sigmoid mesentery
- Ureter (pelvic portion)
- Uterine cervix
- FIGO Stage II b, not further specified
3 Regional lymph node(s) involved only

REGIONAL Lymph Nodes (including contralateral or bilateral nodes)

- Aortic, NOS
- Lateral (lumbar)
- Para-aortic
- Para-aortic
- Iliac, NOS
- Common
- External
- Inferior (hypogastric), NOS: (Recurrent)
- Inguinal
- Lateral sacral (laterosacral)
- Pelvic, NOS
- Retroperitoneal, NOS
- Regional lymph node(s), NOS

7 Distant site(s)/lymph node(s) involved

- Microscopic peritoneal implants beyond pelvis, excluding peritoneal surface of liver (FIGO Stage IIA)
- Macromscopic peritoneal implants beyond pelvis, ≤2 cm in diameter, including peritoneal surface of liver (FIGO Stage IIB)
- Peritoneal implants beyond pelvis, >2 cm in diameter, including peritoneal surface of liver (FIGO Stage III)
- Peritoneal implants, NOS
- FIGO Stage III, not further specified
- Distant lymph node(s)

Further contiguous extension or metastasis:
- Abdominal mesentry
- Colon except sigmoid
- Diaphragm
- Gallbladder
- Kidney
- Liver (peritoneal surface)
- Omentum
- Pancreas
- Pericolic gutter
- Peritoneum, NOS (excluding adjacent pelvic peritoneum)
- Small intestine
- Spleen
- Stomach
- Ureter (retroperitoneal portion)

Metastasis, including:
- Liver parenchymal metastasis
- Pleural fluid (positive cytology)
- FIGO Stage IV

More Distant

% of Cases by Stage

Percent of Cases & 5-Year Relative Survival by Stage at Diagnosis: Ovarian Cancer

- FIGO Stage I
- FIGO Stage II
- FIGO Stage III
- FIGO Stage IV

AJCC Staging

- - - - -
AJCC & Benign

- Benign
- Low malignant potential
- Borderline malignancy
- Listed at end of AJCC chapter (7th & 8th)
- Reportable-by-agreement

AJCC O, FT, P Staging

<table>
<thead>
<tr>
<th>7th Edition</th>
<th>8th Edition</th>
</tr>
</thead>
<tbody>
<tr>
<td>TX</td>
<td>Same</td>
</tr>
<tr>
<td>T0</td>
<td>Same</td>
</tr>
<tr>
<td>T1</td>
<td>Same</td>
</tr>
<tr>
<td>T1a</td>
<td>Tumor limited to 1 ovary (capsule intact) or FT, no tumor on ovarian or FT surface; no malignant cells in ascites or peritoneal washings</td>
</tr>
<tr>
<td>T1b</td>
<td>Tumor limited to both ovaries (capsule intact) or fallopian tubes; no tumor in ovarian or FT surface; no malignant cells in ascites or peritoneal washings</td>
</tr>
<tr>
<td>T1c</td>
<td>Tumor limited to 1 or 2 ovaries or FT, with any of the following: Capsule ruptured, tumor on ovarian surface, malignant cells in ascites or washings</td>
</tr>
<tr>
<td></td>
<td>T1c1: Surgical spill</td>
</tr>
<tr>
<td></td>
<td>T1c2: Capsule ruptured before surgery or tumor on ovarian or FT surface</td>
</tr>
<tr>
<td></td>
<td>T1c3: Malignant cells in ascites or peritoneal washings</td>
</tr>
</tbody>
</table>
# AJCC O, FT, P Staging

## 7th Edition vs. 8th Edition

<table>
<thead>
<tr>
<th>T2</th>
<th>7th Edition</th>
<th>8th Edition</th>
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</thead>
<tbody>
<tr>
<td>T2</td>
<td>Tumor involves 1 or both ovaries with pelvic extension</td>
<td>Tumor involves 1 or both ovaries or FT with pelvic extension below pelvic brim or primary peritoneal cancer</td>
</tr>
<tr>
<td>T2a</td>
<td>Extension and/or implants on uterus and/or tube(s). Neg ascites or washings</td>
<td>Extension and/or implants on uterus and/or tube(s) and/or ovaries</td>
</tr>
<tr>
<td>T2b</td>
<td>Extension to and/or implants on other pelvic tissues. Neg ascites or washings</td>
<td>Extension to and/or implants on other pelvic tissues</td>
</tr>
<tr>
<td>T2c</td>
<td>Pelvic extension and/or implants (T2a or T2b) with malignant cells in ascites or washings</td>
<td>No T2c in 8th ed.</td>
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## 7th Edition vs. 8th Edition

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<tbody>
<tr>
<td>T3</td>
<td>Tumor involves one or both ovaries with microscopically confirmed peritoneal mets outside the pelvis</td>
<td>Tumor involves one or both ovaries or FT, or primary peritoneal cancer, with microscopically confirmed peritoneal mets outside the pelvis and/or mets to retroperitoneal (pelvic and/or para-aortic) LN</td>
</tr>
<tr>
<td>T3a</td>
<td>Microscopic peritoneal metastasis beyond pelvis (no macroscopic tumor)</td>
<td>Microscopic extrapelvic (above the pelvic brim) peritoneal involvement w/o w/o positive retroperitoneal LN 3A1(i) mets up to and including 10 mm 3A1(ii) mets &gt; 10 mm</td>
</tr>
<tr>
<td>T3b</td>
<td>Macroscopic peritoneal metastasis beyond pelvic brim ≤ 2 cm or less in greatest dimension, including bowel involvement outside the pelvis</td>
<td>Macroscopic peritoneal metastasis beyond pelvic brim ≤ 2 cm or less in greatest dimension w/o mets to retroperitoneal LN</td>
</tr>
<tr>
<td>T3c</td>
<td>Peritoneal metastasis beyond pelvic brim &gt; 2 cm in greatest dimension (includes extension of tumor to capsule of liver and spleen without parenchymal involvement of either organ)</td>
<td>Macroscopic peritoneal mets beyond pelvis &gt; 2 cm in greatest dimension w/o mets to retroperitoneal LN (includes extension of tumor to capsule of liver and spleen w/o parenchymal involvement of either organ)</td>
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## AJCC O, FT, P Staging

<table>
<thead>
<tr>
<th>7th Edition</th>
<th>8th Edition</th>
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</thead>
<tbody>
<tr>
<td>Nx Regional LN can’t be assessed</td>
<td>Same</td>
</tr>
<tr>
<td>N0 No regional LN mets</td>
<td>Same</td>
</tr>
<tr>
<td>N0(+) Isolated tumor cells in regional LN(s) ≤ 0.2mm</td>
<td></td>
</tr>
<tr>
<td>N1 Regional LN mets</td>
<td>Positive retroperitoneal LN only (histologically confirmed)</td>
</tr>
<tr>
<td></td>
<td>N1a Mets ≤ 10 mm in greatest dimension</td>
</tr>
<tr>
<td></td>
<td>N1b Mets &gt; 10mm in greatest dimension</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>M0 No distant mets</td>
<td>Same</td>
</tr>
<tr>
<td>M1 Distant mets (excludes peritoneal mets)</td>
<td>Distant mets, including pleural effusion w/positive cytology; liver or splenic parenchymal mets; mets to extra-abdominal organs (including inguinal LN and LN outside abdominal cavity) and transmural involvement of intestine</td>
</tr>
<tr>
<td></td>
<td>M1a Pleural effusion w/positive cytology</td>
</tr>
<tr>
<td></td>
<td>M1b Liver or splenic parenchymal mets; mets to extra-abdominal organs (including inguinal LN and LN outside the abdominal cavity), transmural involvement of intestine</td>
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</table>

AJCC Prognostic Stage Groups (8th ed)

Prognostic Factors (AJCC) (not required for staging)
- FIGO stage – both 7th & 8th ed
- Preop CA-125 - both
- Malignant ascites volume – not in 8th ed
- Gross residual tumor after primary
- Residual tumor volume cytoreductive
- Residual tumor location surgery (both)

Treatment
**Surgery**

- 25-28 Total removal of tumor or single ovary
- 35-37 Unilateral SO
- 50-52 Bilateral SO
- 55 SO WITH Omentectomy
  - Above can be with or without hysterectomy
  
  **Intraperitoneal Chemotherapy**

- 60+ Debulking
- 61 WITH Colon
- 62 WITH Urinary
- 63 Combo
- 70+ Exenteration

- Surgery advantage?
  - IP 61.8 mos, IV 51.4 mos
  - 23% decrease risk death
  - Stage 3 or less with OPTIMAL debulking
  - Adequate renal function if Cisplatin used (may prevent older patients)
  - Treatment-related complications include: abdominal discomfort, infection, obstruction, leakage, access problems, bowel injury (10-35% pt)

**Society of GYN Onc Recommendations (May 2015)**

- Suspected stage 3C or 4 invasive epithelial ovarian cancer should be evaluated by Gyn Onc before tx.
- If high peri-op risk profile OR low likelihood of achieving cytoreduction to < 1cm (no visible disease) should receive neoadjuvant chemo
- Surgery preferred if likelihood of good cytoreduction

**First Line Chemotherapy**

<table>
<thead>
<tr>
<th>Brand Name</th>
<th>Generic (common) Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platinol®</td>
<td>Cisplatin</td>
</tr>
<tr>
<td>Paraplatin®</td>
<td>Carboplatin</td>
</tr>
<tr>
<td>Taxol®</td>
<td>Paclitaxel</td>
</tr>
<tr>
<td>Alkeran®</td>
<td>Melphalan</td>
</tr>
<tr>
<td>Adriamycin®, Rubex®</td>
<td>Doxorubicin</td>
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</table>
Second Line Chemotherapy

<table>
<thead>
<tr>
<th>Brand Name</th>
<th>Generic (common) Name</th>
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</thead>
<tbody>
<tr>
<td>Adriamycin®, Rubex®</td>
<td>Doxorubicin</td>
</tr>
<tr>
<td>Doxi®</td>
<td>Doxorubicin HCL</td>
</tr>
<tr>
<td>Hexalen®</td>
<td>Altretamine; hexamethylmelamine</td>
</tr>
<tr>
<td>Hycamtin</td>
<td>Topotecan hydrochloride</td>
</tr>
<tr>
<td>Ifex®</td>
<td>Ifosfamide</td>
</tr>
<tr>
<td>VePesid®</td>
<td>Etoposide (VP-16)</td>
</tr>
<tr>
<td>5-FU</td>
<td>5-fluorouracil</td>
</tr>
</tbody>
</table>

Other Treatment

- Radiotherapy
  - Rare, (maybe germ cell tumors)
- Gene therapy – clinical trials
- Hormone therapy – not usually

5-Year Relative Survival by Summary Stage

<table>
<thead>
<tr>
<th>STAGE</th>
<th>5-YEAR RELATIVE SURVIVAL RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA</td>
<td>94%</td>
</tr>
<tr>
<td>IB</td>
<td>91%</td>
</tr>
<tr>
<td>IC</td>
<td>80%</td>
</tr>
<tr>
<td>IIA</td>
<td>76%</td>
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<tr>
<td>IIB</td>
<td>67%</td>
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<tr>
<td>IIC</td>
<td>57%</td>
</tr>
<tr>
<td>IIIA</td>
<td>45%</td>
</tr>
<tr>
<td>IIIB</td>
<td>39%</td>
</tr>
<tr>
<td>IIIC</td>
<td>35%</td>
</tr>
<tr>
<td>IV</td>
<td>18%</td>
</tr>
</tbody>
</table>

Follow-Up

- History, Pelvic, Physical
  - q 3 months x 2 years
  - q 4-6 months x 3 yrs
  - then annually
- CA-125 at each visit
- Elevated CA-125 leads to CT, MRI, or PET
- Most recur within 2 years but can recur up to 20 years later
- Patient education about recurrence symptoms
- Using CA-125 may increase use of chemo w/o better survival (per JAMA report 2016)

Ovarian Cancer Mortality Declining

- Annals of Oncology, Sept 2016
- Declining in USA & Europe
  - 9 – 15% decline
- Due to:
  - Increased use of birth control pills
  - Decreased use of hormone replacement therapy
Common Myths

- If ovarian cancer doesn’t run in my family, I will not get it (only 10% is genetic)
- Fertility drugs cause ovarian cancer
- Having ovarian cysts increase your risk of ovarian cancer
- PAP smears can diagnose ovarian cancer

Talc as Causative Risk?

- [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3621109/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3621109/)
- Talc since 1970s has no asbestos
- Female anatomy poses barriers
- Talc in environmental occupations (mining, milling) have no higher risk of lung cancer
- IARC lists talc as group 3 (inadequate evidence in humans)