Surgical Approaches for Advanced Ovarian Cancer

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Types of Ovarian Cancer

Before age 40:
- 15-20%
- 5-10%

After age 40:
- 60-70%

- Epithelial
- Germ cell
- Stroma/ Sex cord
Epithelial Ovarian Carcinoma

Ovarian, fallopian tube and primary peritoneal carcinomas are grouped together as one entity
- Same clinical presentation, natural history
- Similar histology (microscopic appearance)
- Same outcomes with surgery and response to chemotherapy
- Same recurrence patterns
Lack of Effective Screening Strategies

75% present in Stages IIIc and IV

5-year Survival
46.5%
SEER 18 (2007-2013)

Accessed 8/14/2017

[Diagram showing distribution of ovarian cancer stages: Localized (6), Regional (LN) (15), Distant (20), Unknown (60)]
Age Standardized Death Rates in Women

AAPC = Average Annual Percent Change

<table>
<thead>
<tr>
<th>Cancer Site</th>
<th>AAPC (2010-2014)</th>
<th>Death Rate (per 100,000 persons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung and bronchus</td>
<td>-2.0*</td>
<td>36.3</td>
</tr>
<tr>
<td>Breast</td>
<td>-1.6*</td>
<td>21.2</td>
</tr>
<tr>
<td>Colon and rectum</td>
<td>-2.8*</td>
<td>12.4</td>
</tr>
<tr>
<td>Pancreas</td>
<td>-0.2</td>
<td>9.5</td>
</tr>
<tr>
<td>Ovary</td>
<td>-2.3*</td>
<td>7.4</td>
</tr>
<tr>
<td>Leukemia</td>
<td>-1.2*</td>
<td>5.1</td>
</tr>
<tr>
<td>Non-Hodgkin lymphoma</td>
<td>-2.2*</td>
<td>4.6</td>
</tr>
<tr>
<td>Corpus and uterus, NOS</td>
<td>+2.0*</td>
<td>4.6</td>
</tr>
<tr>
<td>Liver and intrahepatic bile duct</td>
<td>+3.0*</td>
<td>3.7</td>
</tr>
<tr>
<td>Brain and other nervous system</td>
<td>+0.4</td>
<td>3.5</td>
</tr>
<tr>
<td>Myeloma</td>
<td>+0.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Kidney and renal pelvis</td>
<td>-1.3*</td>
<td>2.4</td>
</tr>
<tr>
<td>Stomach</td>
<td>-1.9*</td>
<td>2.3</td>
</tr>
<tr>
<td>Cervix uteri</td>
<td>-0.8*</td>
<td>2.3</td>
</tr>
<tr>
<td>Urinary bladder</td>
<td>-0.6*</td>
<td>2.2</td>
</tr>
<tr>
<td>Melanoma of the skin</td>
<td>-0.6*</td>
<td>1.7</td>
</tr>
<tr>
<td>Esophagus</td>
<td>-1.7*</td>
<td>1.5</td>
</tr>
<tr>
<td>Oral cavity and pharynx</td>
<td>-1.4*</td>
<td>1.3</td>
</tr>
</tbody>
</table>

General Treatment Plan

Establish the diagnosis:
- Cytology on ascites fluid
- Primary surgery
- Needle biopsy of mass
- Laparoscopic biopsy

Reliable pathology is essential.
General Treatment Plan

Surgery
Debulking surgery
(cytoreductive surgery)

Chemotherapy

Surveillance
Upfront Surgical Intervention

Primary Debulking Surgery (PDS)
Tumor debulking

Exploratory laparotomy, “open”
Exceptions for minimally invasive approach

Chemotherapy

Paclitaxel + carboplatin
Q 3 wks (or dose dense), 6 cycles
80-90 % CR

Surveillance

80 % recurrence
Advanced Stage Ovarian Carcinoma

Debulking

- To remove as much tumor as possible
- Goal: residual disease less than 1 cm
  - Survival advantage
Cytoreductive Surgery: GOG and Chemotherapy Trials

Volume of residual disease is directly correlated with survival.

22 month improvement in overall survival
Retrospective data
Advanced Stage Ovarian Carcinoma

**Extensive disease**
- Not resectable to R0
- Stage IV
- Poor performance status or nutrition status
- Multiple medical comorbidities

**NeoAdjuvant Chemotherapy**
Alternative Approach: Upfront Chemotherapy

Neoadjuvant Chemotherapy

Paclitaxel + carboplatin
Q 3 wks (or dose dense), 3 cycles

Interval Tumor Debulking (IDS)

Adjuvant Chemotherapy

Paclitaxel + carboplatin
Q 3 wks (or dose dense), 3 cycles

Surveillance

80% recurrence
Advanced Stage Ovarian Carcinoma

Neoadjuvant Chemotherapy
- Paclitaxel/ carboplatin

Surgery

Significant tumor volume reduction

- Laparotomy:
  - Gross residual

- Minimally invasive
  - Robotic versus laparoscopy
  - Minimal residual tumor
Changing Definition for Optimal Debulking: R0 Resection
Maximal Cytoreductive Surgery: Meta-Analysis

- Stage III and IV
- 81 cohorts
- 1989 to 1998
- n = 6,885
- Platinum based chemoTx

The Case for R0 Resection

Regression: OS HR (95% CI)
1-10 mm vs 0 mm 2.70 (2.37-3.07)
>10 mm vs 1-10 mm 1.34 (1.21-1.49)
Log-rank: p< 0.0001

- 3 prospective randomized trials (AGO-OVAR 3, 5, and 7) investigating platinum-taxane based chemotherapy regimens in advanced ovarian cancer
- Total of 3126 patients
Assessing Feasibility of Achieving R0 Resection
Elements of the Laparoscopic Predictive Index Value: Fagotti Score

• Omental cake
• Peritoneal/diaphragmatic carcinomatosis
• Mesenteric retraction
• Bowel/stomach infiltration
• Spleen/liver superficial metastasis

2 points each: Score of 8 or 10 = 100% suboptimal debulking

Laparoscopic Assessment: USA Experience

- Adoption of laparoscopic assessment at MD Anderson Cancer Center
  - Triage algorithm modified from Fagotti
  - $n = 33$
  - No operative complications

Low PIV < 8
$n = 19$ (58%)

Rate of complete resection
84%

Historical
44%

Nick et al. Gynecol Oncol. 2014: 133; 28 (Supp 1).
SGO/ ASCO Clinical Practice Guideline: Recommendations for NACT

- Stage IIIIC with disease too extensive to achieve optimal debulking
  - Based on imaging or laparoscopic scoring
  - Ideally to no visible disease
- Stage IV disease (complete resection < 10%)
- Poor performance status
- No access to experienced gynecologic oncologist/ surgical team
- Elderly or extreme obesity patients when radical surgery appears to be required

Treatment Plan: Spectrum of Care

Surgical

Medical

Social

Patient Care

Individual

Psychological, spiritual, cultural, personal beliefs

- Personalized approach
- Evidence base
- Outcomes
- Safety
- Value

- Personalized approach
- Evidence base
- Outcomes
- Safety
- Value
Conclusions

- The treatment of epithelial ovarian cancer continues to be combination of surgery and chemotherapy.
  - Upfront surgery: greater emphasis on complete resection.
  - Neoadjuvant chemotherapy

- Decision to choose the surgical strategy is a multifactorial process with the goal of maximizing outcomes, minimizing complications and ultimately improving quality of life.
To see a world in a grain of sand,
And a heaven in a wild flower,
Hold infinity in the palm of your hand,
And eternity in an hour.

William Blake