Ovarian Cancer

Andreas Obermair
Gynaecological Oncologist

www.obermair.info
Ovarian cancer in QLD

- Five patients with ovarian cancer per week in QLD.
- Two patients will be diagnosed in early stage (stage 1 or 2).
- Three patients will be diagnosed in advanced stage (stage 3 or 4).
Risk factors

1.5% lifetime risk

Risk factors:

• Reproductive history (incessant ovulation, infertility/treatment, endometriosis, …)
• Genetic factors – BRCA1/2 (40% risk)
• History of breast cancer
Ovarian cancer types

- **Epithelial Ovarian Cancer ~ 90%**
- **Germ cell and sex cord-stromal tumours** (up to 10% of all ovarian tumours): Occur in younger women (20-ies), usually carry a very good prognosis.
- **Borderline tumours:** Fall short the criteria of cancer.
Ovarian Cancer

• Early ovarian cancer
• Advanced ovarian cancer
Early ovarian cancer

• Present with a pelvic mass

• Distinguish benign from malignancy!
  – Age
  – Features on ultrasound
  – CA125
Ultrasound

Solid and cystic, septation, irregularly shaped
# Risk of Malignancy Index

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Scoring system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menopausal status (A)</td>
<td></td>
</tr>
<tr>
<td>Premenopausal</td>
<td>1</td>
</tr>
<tr>
<td>Postmenopausal</td>
<td>3</td>
</tr>
<tr>
<td>Ultrasound features (B)</td>
<td></td>
</tr>
<tr>
<td>Multiloculated</td>
<td>No feature = 0</td>
</tr>
<tr>
<td>Solid areas</td>
<td>One feature = 1</td>
</tr>
<tr>
<td>Bilateral</td>
<td>&gt;1 feature = 3</td>
</tr>
<tr>
<td>Ascites</td>
<td></td>
</tr>
<tr>
<td>Metastases</td>
<td></td>
</tr>
<tr>
<td>Serum CA 125 (C)</td>
<td>Absolute level</td>
</tr>
</tbody>
</table>

\[
\text{Risk of Malignancy Index (RMI)} = A \times B \times C
\]
Risk of Malignancy Index (RMI)

- If RMI > 200
  - Sensitivity 85%  
  - Specificity 97%

- Correctly selects 85% of ovarian cancers.  
- Only 3% of referred cases will be benign.

Treatment of early ovarian cancer

**STAGING IS PROGNOSTIC:**
- TAH/BSO
- Pelvic and aortic lymph node dissection
- Omentectomy
- Washings
- Biopsies

30% Upstaging = *Occult cancer metastases*
Prognosis of stage 1 ovarian cancer

Survival of staged patients ~ 85% @ 5 years

Survival of unstaged patients ~ 70% @ 5 years
Postop. Chemotherapy

- All but selected patients have chemo.
- Selected patients are stage 1a/b, g, ...
- CA 125 < 30 U/mL
Advanced Ovarian Cancer

Surgical Cytoreduction is Essential:

- Radical TAH & BSO, omentectomy, resection of parietal peritoneum, debulking of pelvic/aortic lymph nodes.
- Large & small bowel resections.
- Low rectal resection & end-to-end anastomosis.
- Splenectomy.
Meta Analysis @ ASCO 2001

• 81 cohorts included 6,848 patients, stage 3&4
• Prognostic impact of
  – Postoperative residual tumour
  – Platinum dose intensity
  – Platinum total dose
  – Age
  – Year of publication

Bristow et al., J Clin Oncol 2002
Meta Analysis @ ASCO 2001

• Every 10% increase of residual tumour < 1 cm results in an increase of survival by 6.3%.

• Increase in platinum dose intensity improves survival by 0.8%.
### Meta Analysis @ ASCO 2001

<table>
<thead>
<tr>
<th>% RT &lt; 1 cm</th>
<th>Median Survival*</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 25%</td>
<td>22 months</td>
</tr>
<tr>
<td>&gt; 75%</td>
<td>34 months</td>
</tr>
</tbody>
</table>

* Half of patients alive
Survival and postoperative tumour

Survival in months

% Residual tumour after surgery < 1 cm

Bristow et al.: J Clin Oncol 2002
Why is cytoreduction essential?

- Immediate reduction of tumour mass (improvement of bowel function, diet);
- Chemotherapy is more effective if tumour volume is small (perfusion).
Postoperative residual tumour

Cumulative Survival Rate (%) vs Time (months)

- nil
- optimal
- suboptimal
Training of the Surgeon

With gynaecological oncologist

No gynaecological oncologist
## Training of the surgeon

<table>
<thead>
<tr>
<th>Factor</th>
<th>Adjusted relative hazard</th>
<th>Improvement of model fit</th>
<th>Adverse factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I + II</td>
<td>2.90 (1.69–4.75)</td>
<td>( P &lt; 0.001 )</td>
<td>Stage III + IV</td>
</tr>
<tr>
<td>III + IV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age per 10 year period</td>
<td>1.28 (1.15–1.42)</td>
<td>( P &lt; 0.001 )</td>
<td>Increasing age</td>
</tr>
<tr>
<td>Complete tumour clearance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achieved</td>
<td>2.16 (1.16–4.00)</td>
<td>( P &lt; 0.001 )</td>
<td>Presence of residual disease</td>
</tr>
<tr>
<td>Not achieved</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tumour grade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>1.76 (1.22–2.55)</td>
<td>( P = 0.003 )</td>
<td>Grade II or III</td>
</tr>
<tr>
<td>II + III</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual disease</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(&lt;2) cm</td>
<td>1.54 (1.14–2.09)</td>
<td>( P = 0.002 )</td>
<td>( &gt;2) cm</td>
</tr>
<tr>
<td>(\geq2) cm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gynaecologist</td>
<td>1.34 (1.05–1.71)</td>
<td>( P = 0.022 )</td>
<td>General surgeon</td>
</tr>
<tr>
<td>General surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
“Survival for women with ovarian cancer has been shown to be improved when the initial surgery has been done by a gynaecological oncologist. The surgical care of women with ovarian cancer is best directed, whenever possible, by a gynaecological oncologist.”
Gynaecological Oncologist

- Specialist O&G plus 3 years training in pelvic surgery; exam;
- Re-certification every 3 years;
- Spend at least 66% of time in gynaecological oncology.
The Team

• Gynaecological Oncologist
• GP (diagnosis, referral, coordination of care)
• Gynaecologist
• General surgeon (inadvertent encounter)
• Pathologist
• Nurse specialist
Action #1

- Arrange imaging (US, CT);
  - Never allow drainage of a cyst;
- Take CA125, CA19.9 and CEA;
- Consider age.
- If unsure >> RMI (200 cut-off)
Action #2

Contact either

– Gynaecological Oncologist
– Gynaecologist
– Medical Oncologist
The Team

D. Browne
A. Dunn
I. Korman
P. Isherwood
B. Mullins
M. Slancar

A. Obermair

www.obermair.info