The St. Gallen Model of Cooperative Management of Ovarian Cancer Patients

R. Hornung, St. Gallen
Epidemiology

Ovarian cancer incidence:

Cancer Registry St. Gallen – Appenzell (2010-2012):
- 46 Ovarian cancers/ year
- ~2/3 stage III+IV (~ 30 pats)
Diagnostics

Referring Gynecologist
1. Gynecologic examination
2. Transvaginal + transabdominal sonography
3. Suspicion for ovarian cancer → Admission to a tertiary hospital specialized for gynecologic oncology

Gynecologic Cancer Center
1. General checkup
2. Laboratory: Routine hematology and blood chemistry, Ca 125, CEA (in special cases HCG, AFP and other markers)
3. CAT-scan abdomen (chest)
4. Colonoscopy (the day before surgery)

*S3 Guidelines 2013
Patient’s path, decision making

Refer Gyn → Gyn-Onc → Tumor conference → Med-Onc

Visc-Surg → Radiol Pathol Rad-Onc
Decision making

1. Tumor conference

Primary surgical debulking

Primary neoadjuvant chemotherapy
Decision making

2. Tumor conference

Additive chemotherapy

Interval debulking
Prognosis

The higher the FIGO stage, the poorer the prognosis
Prognosis

Residual tumor following surgery

Cancer 2009;115:1234-44.

- 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: $p < 0.0001$
Prognosis

Residual tumor following surgery

Cumulative survival

Overall survival (months)

RD=0 cm (n=85)
RD=1-2 cm (n=13)
RD>2 cm (n=46)
RD=0-1 cm (n=128)

(p<0.001)
Prognosis

Residual tumor following surgery

--- No

--- Yes (residual disease < 1 cm)
Therapy

Cytoreduction

Residual disease > 1 cm versus microscopic disease

Primary surgery is of utmost importance for the patient’s survival
Surgery of ovarian cancer

Hysterectomy
Bilateral salpingo-oophorectomy
Omentectomy
Pelvine and paraaortal lymphadenectomy
Appendectomy (mucinous ovarian cancer)
Bowel resection (rectum, colon, small intestine) with anastomosis
Splenectomy
Peritonectomy
Cooperative Management of Ovarian Cancer in St. Gallen

Preferential sites for metastasis

Therapy

Systematic inspection of the abdominal cavity
Cooperative Management of Ovarian Cancer in St. Gallen

Therapy
Cooperative Management of Ovarian Cancer in St. Gallen

Therapy
Therapy

Cooperative Management of Ovarian Cancer in St. Gallen

V. Renalis sin.

Aorta

Vena Cava

Ureter dext.
Therapy

- Aorta
- Vena Cava
- A/V Iliaca com. dext.
- A/V Iliaca com. sinist.
- Ureter dext.
Therapy

Lymphadenectomy R0

Lymphadenectomy R1

Lymphadenectomy R0 and no macroscopic suspicious LN
<table>
<thead>
<tr>
<th>Procedure</th>
<th>Count</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Bowel Resection</td>
<td>116/301</td>
<td>38.5%</td>
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<tr>
<td>Rectosigmoidectomy Only</td>
<td>81/116</td>
<td>69.8%</td>
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<tr>
<td>Upper Bowel Surgery Only</td>
<td>17/116</td>
<td>14.7%</td>
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<tr>
<td>Rectosigmoidectomy and Upper Bowel Surgery</td>
<td>18/116</td>
<td>15.5%</td>
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<tr>
<td>Pelvic Peritoneectomy Only</td>
<td>133/301</td>
<td>44.2%</td>
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<tr>
<td>Upper Abdominal Procedures Only</td>
<td>13/301</td>
<td>4.3%</td>
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<tr>
<td>Pelvic Peritoneectomy and Upper Abdominal Procedures</td>
<td>69/301</td>
<td>22.9%</td>
</tr>
<tr>
<td>Upper Abdominal Procedures</td>
<td>82/301</td>
<td>27.2%</td>
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<tr>
<td>Diaphragmatic Peritoneum Stripping</td>
<td>45/82</td>
<td>54.9%</td>
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<tr>
<td>Splenectomy</td>
<td>31/82</td>
<td>37.8%</td>
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<tr>
<td>Colecystectomy</td>
<td>16/82</td>
<td>19.5%</td>
</tr>
<tr>
<td>Liver Metastasectomy</td>
<td>5/82</td>
<td>6.1%</td>
</tr>
<tr>
<td>Partial Gastrectomy</td>
<td>3/82</td>
<td>3.6%</td>
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<tr>
<td>Distal Pancreatectomy</td>
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<tr>
<td>Diaphragmatic Full-Thickness Resection</td>
<td>2/82</td>
<td>2.4%</td>
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<tr>
<td>Hepatic Hilum Lymphadenectomy</td>
<td>1/82</td>
<td>1.4%</td>
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<tr>
<td>Celiac Lymphadenectomy</td>
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<td>1.4%</td>
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<tr>
<td>Retroperitoneal Lymphadenectomy</td>
<td>196/301</td>
<td>65.1%</td>
</tr>
<tr>
<td>Pelvic Lymphadenectomy</td>
<td>188/196</td>
<td>95.9%</td>
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<tr>
<td>Aortic Lymphadenectomy</td>
<td>149/196</td>
<td>74.5%</td>
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</tbody>
</table>
Cooperative Management of Ovarian Cancer in St. Gallen

**Therapy**

Hazard ratio for dying due to ovarian cancer

<table>
<thead>
<tr>
<th>Stage III–IV</th>
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<tbody>
<tr>
<td>Eisenkop [9]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carney [22]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engelen [33]</td>
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<tr>
<td>Chan [42]</td>
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</tr>
<tr>
<td>Bailey [51] (adj)</td>
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</tr>
<tr>
<td>Earle [36] (adj)</td>
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<td></td>
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<tr>
<td>Skirnisdottir [40] (adj)</td>
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<table>
<thead>
<tr>
<th>Stage III</th>
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<tbody>
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<td>Paulsen [37] (adj)</td>
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<tr>
<td>Junor [19] (adj)</td>
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<td></td>
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<tr>
<td>Nguyen [12]</td>
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<table>
<thead>
<tr>
<th>Stage IV</th>
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<tbody>
<tr>
<td>GYO better [3] (adj)</td>
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<tr>
<td>Nguyen [12]</td>
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Gyn-oncologist Ob / Gyn
Cooperative Management of Ovarian Cancer in St. Gallen

Therapy

Ovarian cancer incidence:

Cancer Registry St. Gallen – Appenzell (2010-2012):
- 46 Ovarian cancers / year
- ~2/3 stage III+IV (~ 30 pats)

About 20 surgeries for stage III/IV ovarian cancer / y requested for adequate quality of care

→ In east of Switzerland only 1 center possible / reasonable
Additive Chemotherapy

6 cycles of Carboplatin 5AUC + 175 mg/m² Paclitaxel every 3 weeks (Paclitaxel weekly)

Some indications: + Bevacizumab
Neoadjuvant Chemotherapy or Primary Surgery in Stage IIIC or IV Ovarian Cancer

Survival following neoadjuvant chemotherapy + surgery = Survival following primary surgery + adjuvant chemotherapy

N ENGL J MED 363;10 NEJM.ORG SEPTEMBER 2, 2010
Cooperative Management of Ovarian Cancer in St. Gallen

**Therapy**

Quality of life of advanced ovarian cancer patients in the randomized phase III study comparing primary debulking surgery versus neo-adjuvant chemotherapy

*Gynecologic Oncology 131 (2013) 437–444*

Survival and **quality of life** of patients with ovarian cancer III / IV  
neo-adjuvant chemotherapy + secondary debulking  
=  
primary surgery + adjuvant chemotherapy

→ Survival and quality of life are significantly better when the patient is treated in a gyn-onc center
**Therapy**

Patients profiting from **primary debulking surgery**

- Stage IIIA/B
- Stage IIIC radical operable (R0 very likely to be achieved)

Patients profiting from neoadjuvant chemotherapy followed by interval debulking

- Stage IIIC R0 very likely not to be achieved (small bowel)
- Stage IV (probability for R0 resection < 10%)
- Poor general condition
- Logistic problems

→ **Individual decision (team, experience)**