Management of Cervical Cancer in Pregnancy.

Michael Halaska
Oncogynecology unit
Dept. Of Obstetrics and Gynecology
2nd Medical Faculty,
Charles University in Prague
Czech Republic

Epidemiology

- variability in incidence
- different screening programs
- different guidelines

<table>
<thead>
<tr>
<th>country</th>
<th>incidence</th>
<th>mortality</th>
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<tbody>
<tr>
<td>Finland</td>
<td>4,3</td>
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<tr>
<td>Spain</td>
<td>7,6</td>
<td>2,2</td>
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<td>United Kingdom</td>
<td>8,3</td>
<td>3,1</td>
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<tr>
<td>France</td>
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<td>3,1</td>
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<td>Germany</td>
<td>10,8</td>
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<tr>
<td>Czech R.</td>
<td>16,2</td>
<td>5,5</td>
</tr>
<tr>
<td>Poland</td>
<td>18,4</td>
<td>5,5</td>
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</tbody>
</table>

IARC, Globocan 2002
Cervical cancer during pregnancy
- 10-30/100 000 pregnancies
- 2005: 102 211 deliveries

Epidemiology

usually early diagnosed
- stage I: 69-83%
- stage II: 11-23%
- stage III, IV: 3-8%
  - Zemlickis, D., JCO, 1991
  - Jones, WB, 1996, Cancer

spinocellular ca 82.7%, adenoca 11.8%
  - van Calsteren, K, Best Pract Res Clin OG, 2005

prognosis comparable to non-pregnant women
  - Fukushima, K., IJGC, 2009
  - Nguyen, C., Obstet Gynecol Surv, 2000
  - Zemlickis, D., JCO, 1991
  - Hopkins, MP., Obstet Gynecol, 1992
Detection

- asymptomatic
- discharge
- post-coital bleeding 20-59 %
- cytology 50-63 %
  - Fukushima, K., IJGC, 2009
  - Sood, AK, Gynecol Oncol, 1996
  - Duggan, B, Obstet Gynecol, 1993
  - Lee, RB, Obstet Gynecol, 1981

Detection

- asymptomatic
- post-coital bleeding 20%
- cytology 63%
  - eversion (large area)
  - decidual cells (atypia like)
    - hypervacuolater cells, variably staining cytoplasm, large nucleus
    - Michael, CW, Diagn Cytopathol, 1997
    - Pisharodi, LR, Acta Cytol, 1995
    - Economos, K, Gynecol Oncol, 1993
  - note the pregnancy
Diagnostics

- colposcopy
- biopsy
- conization
- ultrasound
- MRI

- increased cervical volume
- mucous, vaginal wall
- increased vascularisation
- stromal oedema
- glandular hyperplasia
- x eversion

**Diagnostics**

- Colposcopy
- Biopsy
- Conization
- Ultrasound
- MRI

- Speculum
- Careful insertion
- Acetic acid 3%

- Increased cervical volume
- Mucous, vaginal wall
- Increased vascularisation
- Stromal oedema
- Glandular hyperplasia
- X eversion

*Hunter, MI, Am J Obstet Gynecol, 2008*
Diagnostics

- colposcopy
- biopsy
- conization
- ultrasound
- MRI
- speculum
- carefull insertion
- acetic acid 3%

- increased cervical volume
- mucous, vaginal wall
- increased vascularisation
- stromal oedema
- glandular hyperplasia
- x eversion


Diagnostics

- colposcopy
- biopsy
- conization
- ultrasound
- MRI

- colposcopically guided
- same risks as in non-pregnant women
  - Michael, CW, Diagn Cytopathol, 1997
  - Paraskevaidis, E, Eur J Obstet Gynecol, 2002
- risk of bleeding 1-3%
  - van Calsteren, K, Best Pract Res Clin Obstet Gynaecol, 2005
**Diagnostics**

- colposcopy
- biopsy
- conization
- ultrasound
- MRI

- colposcopically guided
- same risks as in non-pregnant women
  - Michael, CW, Diagn Cytopathol, 1997
  - Paraskevaidis, E, Eur J OGRB, 2002
- risk of bleeding 1-3%
  - van Calsteren, K, Best Pract Res Clin OG, 2005

- only in "oncocenters"
- vaginal packing

- only when microinvasion is suspected
- small risk of preterm pregnancy when performed between 12th and 20th week of pregnancy
  - Robova, H, Eur J Gynecol Oncol, 2005
  - van Calsteren, K, Best Pract Res Clin OG, 2005
Diagnostics

- colposcopy
- biopsy
- conization
- ultrasound
- MRI

12th-20th week of pregnancy
- ligature of a.uterina descendens
- Terlipressin 4x4ml, 3 minutes
- LLETZ flat cone, vaginal packing for 24 hours, (tocolytics)

- only when microinvasion is suspected
- small risk of preterm pregnancy when performed between 12th and 20th week of pregnancy
  - Robova,H, Eur J Gynecol Oncol, 2005
  - van Calsteren,K, Best Pract Res Clin OG, 2005

- safe during whole pregnancy
- volumometry
- parametrial involvement
  - Fischerova,D, Int J Gynecol Cancer, 2008
- experienced examinator
Diagnostics

- colposcopy
- biopsy
- conization
- ultrasound
- MRI

- safe after 1st trimester
  - Nagayama, M, Radiographics, 2002
  - volumometry
  - parametrial involvement
    - Choi, HJ, Cancer, 2006
    - Fischerova, D, Int J Gyn Cancer, 2008
    - Nicklas, AH, Seminars Oncol, 2000

Management

- based on trimester
  - First non-viable f.
  - Second viable f.
  - Third

- based on the fertility wish
  - pregnancy non-preserving
  - fertility preserving
  - pregnancy preserving

- based on the stage
Management – by trimester

- **First trimester**
  - hysterectomy/radical hysterectomy
  - postpone treatment till the second trimester

- **Second trimester**
  - hysterectomy/radical h./radiotherapy (non-viable fetus)
  - fertility preserving management
  - pregnancy preserving management
  - delay treatment

- **Third trimester**
  - preterm delivery
  - pregnancy preserving management
  - delay treatment

Management

- based on trimester: First, Second, Third
- based on the fertility wish: pregnancy non-preserving, fertility preserving, pregnancy preserving
- based on the stage
Management - pregnancy non-preserving

- hysterectomy/radical hysterectomy
  - with fetus in utero*
    - Monk, BJ, Obstet Gynecol, 1992
    - Sivanesaratnam, V, Gynecol Oncol, 1993
  - after hysterotomy
- radiation/chemoradiation
  - with fetus in utero
    - spontaneous abortion (24-34 day)
    - Prem, KA, Am J Obstet Gynecol, 1966
  - after hysterotomy*
    - Saunders, N, Gynecol Oncol, 1988

Management – fertility preserving

- abortion (usually 1\textsuperscript{st} and early 2\textsuperscript{nd} trimester) with the combination of fertility preserving procedure
  - surgery alone:
    - conisation/trachelectomy + lymphadenectomy
    - radical vaginal/abdominal + lymphadenectomy
  - surgery after neoadjuvant chemotherapy
Management - pregnancy preserving

- **IA1**
  - conization + reevaluation postpartum
- **IA2, IB1 (less than 2 cm)**
  - lymphadenectomy + conisation/trachelectomy*
- **IB1 (larger than 2 cm), IB2, IIA**
  - lymphadenectomy + trachelectomy
  - neoadjuvant chemotherapy*
- **IIB**
  - neoadjuvant chemotherapy

Amant, F. Best Pract Res Clin OG, 2009

Amant, F. Int J Gynecol Cancer, 2009
Management - pregnancy preserving

SURGERY - literature

IA1

- conization
  - Robova, H, Eur J Gynecol Oncol, 2005

IA2

- simple trachelectomy
- simple trachelectomy + lymphadenectomy
  - Ben Arie, A, Obstet Gynecol, 2004

IB1

- conization + lymphadenectomy
  - Marnitz, S, Fertil Sterility, 2009
- vaginal radical trachelectomy + lymphadenectomy
  - van Nieuwenhof, HP, Int J Gynecol Cancer, 2008
- abdominal radical trachelectomy + lymphadenectomy
  - Ungar, L, Obstet Gynecol, 2006
  - Abu-Rustum, N, Gynecol Oncol, 2009

SLNM
NEOADJUVANT CHEMOTHERAPY
- cisplatin 75 mg/m² + paclitaxel 175 mg/m² every 3 weeks
- carboplatin 6 AUC + paclitaxel 175 mg/m² every 3 weeks
  - Amant, F, Int J Gynecol Cancer, 2009
- other?
  - cisplatin 75 mg/m² every 10 days
  - cisplatin 75 mg/m² + doxorubicin 35 mg/m² every 2 weeks
  - cisplatin 75 mg/m² + paclitaxel 175 mg/m² every 2 weeks
  - cisplatin 50 mg/m² + vincristine 1 mg/m² every 3 weeks

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<th>author</th>
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Delay

- IA1, IA2 relatively safe
- IB1 max of 12 weeks
- IB2 max of 6 weeks
- II and higher max of 2 weeks
- van Calsteren, K, Best Pract Res Clin OG, 2005

Delivery

- timing of delivery
  - fetal maturity
  - lung maturation
  - from the last chemotherapy
- mode of delivery
  - spontaneous
  - caesarean section
Delivery

**SPONTANEOUS versus CAESAREAN SECTION DELIVERY**

- Presence of the tumour at the delivery
  - Yes: caesarean section*
  - No: vaginal delivery can be considered

- Risk of recurrences
  - In episiotomy scar
    - Gordon, AN Obstet Gynecol, 1989
    - Goldman, NA, Gynecol Oncol, 2003
  - In laparotomic scar
    - Tewari, K, Cancer, 1998
    - Sivanestaratnam, G, Obstet Gynecol, 1993

Case 1

- 35 years old women, III/III
- 6th week of preg. – punch b.: CIS
- 13th week of preg. – conisation
  - SCC, G3, IB1
- 16th week of preg. – simple trachelectomy + lymphadenectomy + cercl.
- 36th week of preg. - caesarean section + simple hysterectomy, 2380g, male
- 3 month postpartum - NED
Case 2

- 21 years old women, I/I
- every 6 month LSIL/LGL
- 12\textsuperscript{th} week of preg: LSIL, LGL
- 28\textsuperscript{th} week of preg – atypical v., punch biopsy – SCC, G2
- IB1 – 10 mm, surface spread
- NAC – paclitaxel 175 mg/m\textsuperscript{2} + cisplatine 75 mg/m\textsuperscript{2} every 2w
- 37\textsuperscript{th} week of preg: Caesarean section + radical hysterectomy
  - female, 3200g, 10, 10, 10
Conclusions

- increasing incidency
- new treatment possibilities
- close follow-up
  - mother  fetus  child
- specialized centers with dedicated teams and perinatologic unit

Int J Gynecol Cancer, 2009, 19 (S1), 1-12

Gynecologic Cancers in Pregnancy: Guidelines of an International Consensus Meeting

Frédéric Amant, MD, PhD, Kristel Van Calsteren, MD, Michael J. Halaska, MD,
Jos Beijnen, MD, PhD; Lieven Lagae, MD, PhD; Myriam Hanssens, MD, PhD; Liesbeth Heyns,*
Lore Lannoo, MD, Nelleke P. Ottoeanger, MD, PhD; Walter Vanden Bogert, MD, PhD,**
Lucio Urga, MD, PhD; Ignace Vergonie, MD, PhD, and Andreas du Bois***

mhalaska@centrum.cz
www.halaska.eu