Cervical Cancer Screening in the Netherlands

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Presentation outline

• Etiology

• Screening program in the Netherlands

• Evaluation and role of the Cancer Registry:
  General feedback
  Examples based on thesis

Maaike van der Aa
Researcher CCC North East
Incidence of cervical cancer varies across the world

Cervix uteri
Age-Standardized incidence rate per 100,000

GLOBOCAN 2002, IARC
Etiology

• HPV infection

• Prevalence: 80% of sexually active young women

• Peak prevalence between 25-29 yrs old

• HPV persistence increases with age
Natural clearance

- 10-20% will develop premalignant lesions
- Low grade preinvasive lesions
  - 60% clearance
  - 1% malignancy
- High grade preinvasive lesions
  - 33-40% clearance
  - 12% malignancy
Risk factors for HPV infection

Sexually transmitted

• Number of sexual partners
• Lower age of first sexual activity
• Number of sexual partners of male partners

↓

Socioeconomic Status
Oncogenic transformation

HPV infection → oncogenic transformation → CINI → CINII → CINIII → CIS → Invasive carcinoma
George Papanicolaou

- Pap-smear test (cervical cytology)
- 1928
- Detect premalignant lesions

Prevention and Screening for cervical cancer
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Screening programs

• Mass screening for cervical cancer has been performed in several countries with varying success

AIM:

Detecting intraepithelial lesions (ASCUS = PAP II) and treat high-grade preinvasive lesions (HSIL = PAP IV)
Screening program in the Netherlands
Pilot start: 1976

Nation wide screening program: 1989

Before 1996:
• Women aged 35 to 55 years
• Screened with three years interval

From 1996 onwards:
• Women aged 30 to 60 years
• Screened with five years interval

Opportunistic screening
Screening program in the Netherlands: costs

• 26 million Euros per year
• 12,500 Euro per saved life year
• 48 Euro per smear
Screening program in the Netherlands: organisation

• RIVM ([http://www.rivm.nl](http://www.rivm.nl))

• 12 screening organisations

• Women are invited via several ways:
  Screeningsorganisation
  General practitioner
  Public Health Care Organisation (GGD)

• GP or assistant takes smear
Screening program in the Netherlands: detection premalignancies

- Specially trained cytotechnicians
- Non-negative cases > head-cytotechnician
- Cytopathologist final report
- Results in PALGA (national automated pathology archive)
- Referral to gynaecologist if:
  Repeated borderline findings (PAP II or IIIA)
  Positive cytology (PAP IIIB-IV)
Screening program in the Netherlands: evaluation of organisation

- 66% attendance rate
- 7% with a high grade premalignant lesion is not followed-up within 5 months
- 16% with a low grade premalignant lesion is not followed-up within 12 months
Who is involved in the evaluation?

• Screening organisation (attendance rate)

• Pathology labs (smears, pre-malignant lesions, carcinoma)

• Erasmus University Rotterdam Van Ballegooijen et al.

• Comprehensive Cancer Centres Netherlands Cancer Registry

“The Role of cancer Registries in Cancer Screening DUTCH - a European Perspective”
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Incidence cervical cancer in the Netherlands

- 7.3 per 100,000 (ESR)
- Estimated Annual Percentage Change (EAPC) = -1.9%

*Cervix uteri cancer trends in incidence & mortality*

Source: Eindhoven Cancer Registry (IKZ) © 05-04-2006
Decline in incidence mainly in squamous cell carcinoma
Survival cervical cancer

Relatieve overleving naar periode van diagnose

Baarmoederhalskanker (ICD-code: C53)

percentage overleving

aantal jaren na de diagnose

1987-1991
1992-1996
1997-2001
2002-2006
Survival per age group

Relatieve overleving naar leeftijd (1997-2006)
Baarmoederhalskanker (ICD-code: C53)
Time-space trend in incidence

Incidence of Cervical Cancer
1989-1994

Incidence of Cervical Cancer
1998-2003

http://www.ikcnet.nl/uploaded/FILES/IKST/Landkaarten/nl_cerv_f_i_8903_20070306_010257IKCNetdef.html#
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1. Time-space trends in relation to risk factors

• More common among women of lower SES and immigrant women

• Lower SES associated with higher stage and worse survival

• Higher risk in women born in Surinam or Marocco

• Target future cervical cancer prevention at women with lower SES who do not participate

Van der Aa et al. 2008 Eur J Cancer Prev. 17(5); 453-9
Visser et al. 2007 Eur J Cancer. 43(5); 901-8
2. Does lowering the screening age make sense?

• NO

• Incidence and mortality is low below 30 years

• Number of gained life years is not in proportion to the disadvantages (fear, overtreatment) and costs

3. Screen detected versus medical indication
higher stage > lower survival
4. Treatment of cervical cancer: staging FIGO
Treatment of cervical cancer: guideline

• FIGO stage IB (excl IB2) -IIA: surgery and radiotherapy
  Same outcome

• FIGO stage IIB-IVA (incl IB2): radiotherapy and/or chemotherapy
  Recommended in guideline chemoradiation

www.oncoline.nl
Treatment of cervical cancer: conclusion

- Older patients with cervical cancer and those with comorbidity were treated less aggressively.

- Because of the ever-increasing role of comorbidity in clinical decision-making for increasingly older patients in the near future, development of age-specific guidelines incorporating levels and management of specific comorbidity seems warranted.

Ongoing projects

• Screening history in women with cervical cancer >60 years

• Trends in incidence and mortality

• Guideline adherence for treatment of cervical cancer
HPV vaccination

• Since 2009
• Girls of 12 years old
• Aim: prevent 70% of all cervical cancer cases
• 60% attendance rate (lower than expected)
TO BE CONTINUED…

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