Cervical cancer prevention
Studies on possible improvements

Akademisk avhandling

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av

Björn Strander

Fakultetsopponent:
Professor Ole-Erik Iversen
Haukeland Universitetssykehus, Bergen

Avhandlingen baserar sig på följande studier:

I Strander B, Andersson-Ellström A, Milsom I, Rådberg T, Ryd W. Liquid-based cytology versus conventional Papanicolaou smear in an organized screening program : a prospective randomized study. Cancer. Oct 25 2007;111(5):285-291

II Strander B, Andersson-Ellström A, Franzen S, Milsom I, Rådberg T. The performance of a new scoring system for colposcopy in detecting high-grade dysplasia in the uterine cervix. Acta Obstet Gynecol Scand. Oct 2005;84(10):1013-1017.

III Strander B, Andersson-Ellström A, Milsom I, Sparén P. Long term risk of invasive cancer after treatment for cervical intraepithelial neoplasia grade 3: population based cohort study. BMJ. October 24, 2007 2007:bmj.39363. 471806.BE.

IV Strander B, Ryd W, Wallin KL, Wärleby B, Zheng B, Milsom I, Gharizadeh B, Pourmand N, Andersson-Ellström A. Does HPV-status 6-12 months after treatment of high grade dysplasia in the uterine cervix predict long term recurrence? Eur J Cancer. Jul 3 2007;43(12):1849 - 1855.

Cervical cancer prevention – Studies on possible improvements

Björn Strander, Department of Obstetrics and Gynecology.
Sahlgrenska Academy at Göteborg University, Göteborg Sweden

Aims: The aim of this study is to target and assess possible improvements for women attending cervical cancer screening programs.

Methods: In a randomized study the use of ThinPrep liquid based cytology (LBC) was tested against conventional cytology. 13 484 samples, taken within the screening program, were evaluated. Main outcome was cervical intraepithelial lesion grade two or more (CIN2+) in histopathology at follow up. A scoring system for colposcopy was constructed. It was tested in 297 women with abnormal cytology. The relationship between the scoring units and CIN was modelled with logistic regression. To assess the risk after treatment of CIN3 a cohort of 132 493 women with this diagnosis was followed up in the Swedish cancer register for development of vaginal or cervical cancer. Standard incidence ratios (SIR) and absolute risk difference were calculated. A case control study was performed to study the predictive ability of HPV-testing after surgery for CIN2+. Cases were 189 women with recurrence of CIN2+ more than two years after treatment. Exposure was presence of HPV in smears within two years post treatment.

Results: In the LBC-arm >40% more high grade lesions were found and 30% more women needed follow up. Inadequacy rate of smears fell 60%. The scoring system for colposcopy showed very good ability to find and exclude CIN2+ at certain cut off points and area under ROC curve for the system was 0.87. Women treated for CIN3 had a 2.5 times increased risk for vaginal or cervical cancer. Risk did not decrease substantially after 25 years and was accentuated when treatment was made in women older than 50. Risk also increased with time-period of treatment. Among women treated for CIN2-3 the odds ratio for recurrence was 2.5 when testing positive for HPV 6 – 12 months post surgery and sensitivity of the test was 24%.

Conclusions: Liquid based cytology and a new colposcopic scoring system can improve detection of CIN2+. Women once treated for CIN3 constitute a high risk group that needs to be followed up for a long time. More studies are needed to find the best strategies for such follow up.

Keywords: Cervical intraepithelial neoplasia, cytology, colposcopy, HPV, cervical neoplasm, epidemiology, treatment, follow up

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