

HPV E6/E7 mRNA-transcripts as an early predictor of cervical neoplasia in a multicenter study of a high-risk population

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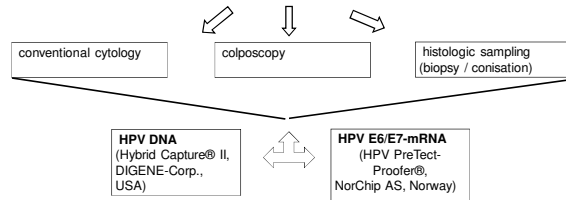
Klinikum Lahr, Institute of Pathology, Lahr, Germany; 2: University of Freiburg, Institute of Pathology, Freiburg, Germany; 3: Charité-Universitätsmedizin Berlin Germany; 4: University of Freiburg, Women's Hospital Freiburg, Germany; 5: Private Institute OBGYN Stralsund, Germany; 6: Private Institute OBGYN Ulm, Germany; 7: University of Greifswald, Women's Hospital Greifswald, Germany; 8: Women's Hospital Stuttgart, Germany; 9: University of Cologne, Women's Hospital Cologne, Germany

Objective

Detection of HPV E6 and E7 mRNA has been shown to be of higher prognostic value for the evaluation of precursor lesions of cervical carcinoma than the detection of HPV DNA in a number of pilot studies^{1, 2, 3}. In particular in low grade lesions HPV DNA testing has poor discriminating power as to the progression of CIN, thus leading to considerable overtreatment with ensuing costs to the health care system. Therefore we tested the value of the presence of HPV E6 / E7 mRNA as a marker of cervical dysplasia.

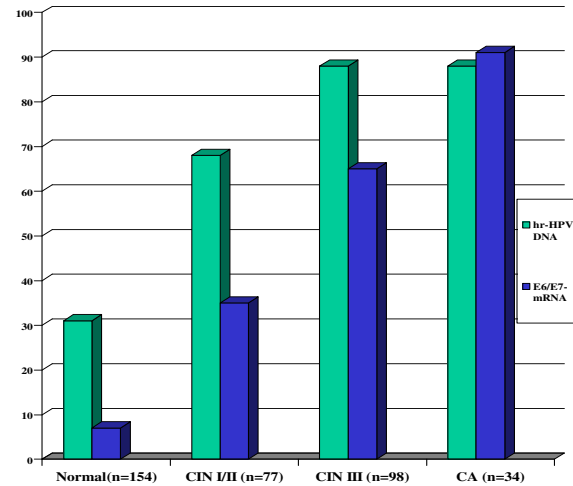
Study design

363 patients and were recruited from cervical dysplasia clinics of 7 clinical centres in Germany

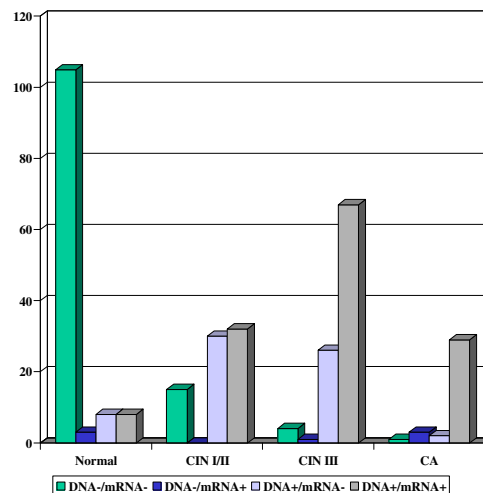


According to the histology / cytology the patients were divided into a control group with normal cytology or histology and a group of patients with a different degree of dysplasia.

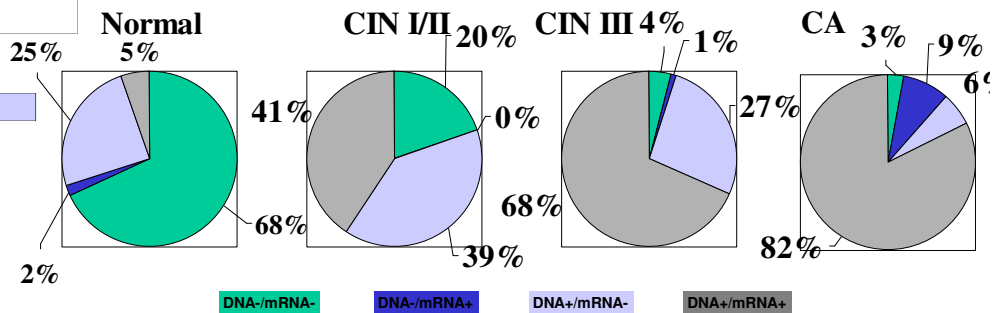
HPV DNA and E6 / E7 mRNA detection rate (%) in relation to morphology



Distribution of HPV DNA and mRNA detection



Distribution of mRNA and DNA findings in %



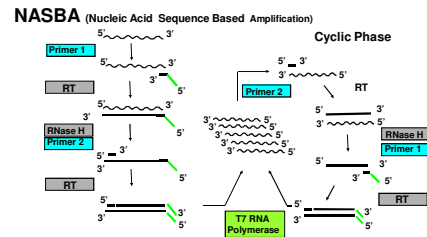
Papanicolaou (Pap) smear procedure and transport

PAP smears were generated with a cytobrush and airdried. For transport of additional smears for molecular examination cells were filled into ThinPrep PreservCyt® Ssolution (Cytoc® Germany GmbH). Within this solution a postal transport was easily possible and nucleic acids were stable for two weeks.

Molecular Methods

Qualitative HPV E6 / 7 mRNA detection of HPV type 16, 18, 31, 33, 45

by PreTect Proofer®, Norchip® AS



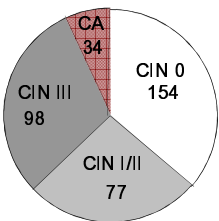
Qualitative HPV DNA detection of HPV type 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 68 by Hybrid Capture® II, Digene® Corp., MA, USA

Results

Histological staging

Number of patients per histological result

CA carcinoma
CIN cervical intraepithelial neoplasia



Literature

•Molden et al. 2005. Int. J. Cancer (114): 973-976
•Lie et al. 2005. Gyn. Oncol. (97): 908-915

Conclusion

- E 6 / 7 mRNA detection is more often positive in progressed dysplastic cervical lesions compared to lesions with mild dysplasia. In cervical carcinoma the detection rate was
- The detection of E 6 / 7 mRNA in CIN 0 and CIN I/II patients requires prospective studies to elu