



COMPARISON OF PREVALENCE OF HUMAN PAPILLOMAVIRUSES (HPV) IN CERVICAL SMEARS WITH DIFFERENT ABNORMAL CYTOLOGICAL PATHOLOGY

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Objectives

- To assess the distribution of oncogenic HPV types in different stadia of cytologic pathology: low/ high grade squamous intraepithelial lesion (LSIL/HSIL), atypical glandular cells (AGC), atypical squamous cells – cannot exclude HSIL (ASC-H), atypical squamous cells of unknown significance (ASCUS).

Methods

- DNA of 678 patients with an abnormal Pap smear was extracted using the MagNA Pure LC (Roche) platform and analysed with the PapilloCheck® method (Greiner Bio-One) as described by the supplier.
- The median age of the population was 34 years old (range 14-86). Only women who came for the national screening program where involved, follow up patients were excluded in this study.

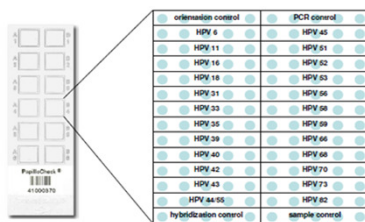


Fig. 1: Layout of the PapilloCheck® DNA chip. Each of the 12 wells of a PapilloCheck® chip contains a microarray with 28 different probes arranged.

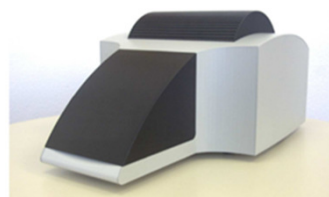
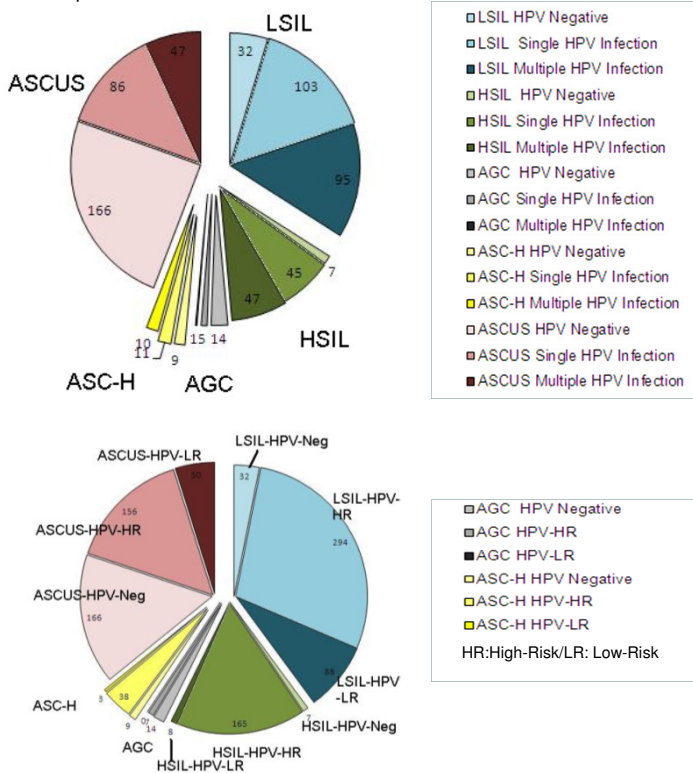


Fig 2: The CheckScanner™ reads the PapilloCheck® DNA chip and the CheckReport™ software interprets the Signal to Noise Ratio (SNR) for each probe.

Results

- 45% (133/299) of the ASCUS samples were positive for HPV. 64% of them were single type infections.
- 32/230 (13.9%) of the LSIL and 7/99 (7%) of the HSIL samples were HPV negative. Almost half of the positive samples were multiple infections.



- There was a wide distribution of HPV types in smears with an AGC or ASC-H diagnosis but due to a limited number of positive samples (26) no statistic evaluation was performed.
- HPV16 and HPV18 were more prevalent in HSIL samples 27.88 and 5.45% respectively compared to LSIL (10.88 and 1.70%) and ASCUS (11.54 and 3.21%) samples.
- HPV56 was more prevalent in LSIL samples (10.88%) compared to HSIL (4.85%) and ASCUS (6.41%).
- The prevalence of HPV53 was very low in the HSIL population (2.42%) compared to LSIL (11.9%) and ASCUS (10.26%).
- There was no significant difference in the HPV distribution of high risk types HPV45, HPV31, HPV33, HPV52, HPV58, HPV35, HPV59, HPV 51, HPV39, HPV68, HPV73, HPV82, HPV66.
- Low risk types (HPV6, HPV11, HPV40, HPV42, HPV43, HPV44/55) are more frequently detected in LSIL samples. The most detected HPV type was HPV42.

HR-Type	LSIL	HSIL	ASCUS
16	10,88	27,88	11,54
18	1,70	5,45	3,21
45	2,72	3,03	2,56
31	6,46	8,48	5,13
33	4,42	6,67	4,49
52	3,06	4,85	5,13
58	5,10	4,24	7,05
35	0,68	1,82	1,92
59	6,12	2,42	6,41
56	10,88	4,85	6,41
51	9,52	6,67	8,33
39	5,44	3,03	7,69
68	4,76	4,85	5,77
73	5,10	3,64	2,56
82	1,70	3,64	2,56
53	11,90	2,42	10,26
66	6,46	4,85	5,77
70	3,06	1,21	3,21

Table 1: Distribution of HPV-types in smears with abnormal Pap smear

Conclusion

As expected the prevalence of the oncogenic HPV types was much higher in HSIL samples than in LSIL/ASCUS as such types are more likely to persist.

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