Human papillomavirus genotyping obtained by two commercial methods.
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Purpose
To compare the two commercial kits for human papillomavirus (HPV) genotyping “Clinical Arrays® Papillomavirus Human” (MA) from Genomica and “Linear Array HPV” (LA) from Roche, on samples from Swiss women screened for cytological abnormalities.

Material and Methods
ThinPrep cervical swabs (n=54) were tested with LA and MA in two different laboratories within 3 months. Samples were first screened for cytological abnormalities and then sent for genotyping under request. Both tests include a PCR amplification of a L1 gene sequence and a hybridization on genotype specific probes of the biotinylated amplicons. Streptavidin-Peroxidase conjugate is revealed by TMB substrat forming a blue precipitation complex. Sample adequation and extraction, amplification and hybridisation process are controlled

Internal controls check for human beta-globuline gene (LA) or CFTR gene 892bp fragment (MA) amplification.
Results are read visually compared to a reference guide (LA) or automatically read and interpreted resulting in a printable report or LIS transferable datas (MA)

LA HPV Genotypes : 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 45, 51, 52, 53, 54, 55, 56, 58, 59, 61, 62, 64, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84, IS39, CP6108
MA HPV Genotypes : 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 68, 70, 71, 72, 73, 81, 82, 83, 84, 85, 89

Cytological results yielded 33 ASCUS, 17 CIN1, 1 CIN2, 3 normal.
The mean ages of the patients was 32 years (range 17 to 54)

Discussion
Both tests failed to detect HR HPV in at least one sample. Among the main oncogenic HPV, sensitivity to detect type 16 and type 45 were slightly higher for LA and equal for type 31; no type 18 were identified in the samples.
This suggest that a low copy number of type 16 internal control should be added to a series of tests to prove the constant high sensitivity to this type which is defined by the manufacturer to be 200 copies/ml for LA and MA.

Conclusion
Sensitivity and specificity of HPV genotyping tests reveal differences that may disturb the patient's follow up if not done on the same test and not constantly controlled for highest sensitivity by including an quantitative internal control.