



HPV Prevalence in DRC: samples vs tumours

Alex Mutombo, MD

Supervisors: Yves Jacquemyn, Rahma Tozin, Ina Benoy, Johannes Bogers, JP Van Geertruyden



Objectives

- To determine the prevalence of cervical HPV infection and the genotypes of circulating HPV in Kinshasa, DRC.





Study Population

- Women aged 25 years and more were invited to attend a cervical cancer screening programme organized at the Mont-Amba Health Centre, from July 2015 to July 2017.
- All women aged at least 25 years old, regardless of their previous screening history, with no history of invasive cervical cancer, or no history of total hysterectomy, and who gave their written informed consent were allowed to attend the program.



Methods

- After informed consent was obtained, cervical specimen for Liquid-based cytology (LBC), HPV testing and genotyping were first collected using standard cytobrushes and stored in PreservCyt[®] solution.
- Moreover, **400 cases from invasive cervical cancer** were included to look at HPV strain prevalence in cancer, facilitating the discussion of which HPV types really cause cancer besides being “just” present in the population;
- All specimens collected were sent for analyses at Algemeen Medisch Laboratorium (AML) BVBA, in Antwerp, Belgium. AML is Part of the **National Reference Centre for HPV** in Belgium.



HPV testing

- DNA concentration (ng/μl) was determined in every sample. Samples with a DNA concentration below 0,12 ng/μl were considered as invalid and reported as not evaluable (NE).
- HPV genotyping was performed on all samples with the - **RIATOL qPCR HPV genotyping test-** , blinded from all clinical data.
- The Riatol qPCR HPV test, not only detects **14 HR-HPV** types (16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, and 68), but also reports selected potential high-risk or low-risk HPV types (6, 11, 53, and 67)

HPV Prevalence

- The prevalence of HPV infection was determined by the ratio of the number of HPV-positive specimens by the total number of specimen collected and evaluated within the study population

RESULTS





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Demographics of the study population

- In total, **1870** women were screened during the study period.
- Mean age : **46 ± 11 years.**
- Women aged **40 to 59** years old were the most represented (57.3%).
- A vast majority of women (64.1%) were married.
- Most of them attended secondary school (54%) and had a remunerated profession (41.8%).
- 72% of women had their first sexual intercourse from 10 to 19 years of age.
- Mean age at first sexual intercourse: **18.2 ± 3.5 years.**



HPV Results

The final categorical results for HPV were as follows:

- HPV negative: no HPV detected
- hrHPV+: sample positive for at least 1 hrHPV type
- lrHPV+: sample negative for hrHPV but positive for at least 1 lrHPV
- - NE DNA INSUF: sample not evaluable, insufficient cells



HPV Prevalence

- Among the 1870 samples collected on women at baseline, 24 were not evaluable due to insufficient HPV DNA concentration.
- Valid HPV results were available from 1846 (98.7%) of sampled women.
- Of these, 1325 (72%) were negative for HPV, and 521 tested positive for HPV.
- Overall HPV prevalence rate was **28.2%**.



Table 1. HPV results

HPV result	Frequency	%
hrHPV+	403	21.9
hrHPV+ and IrHPV+	54	2.9
IrHPV+	64	3.4
HPV negative	1325	71.8
Total	1846	100.0

Table 2. Age distribution of HPV infection

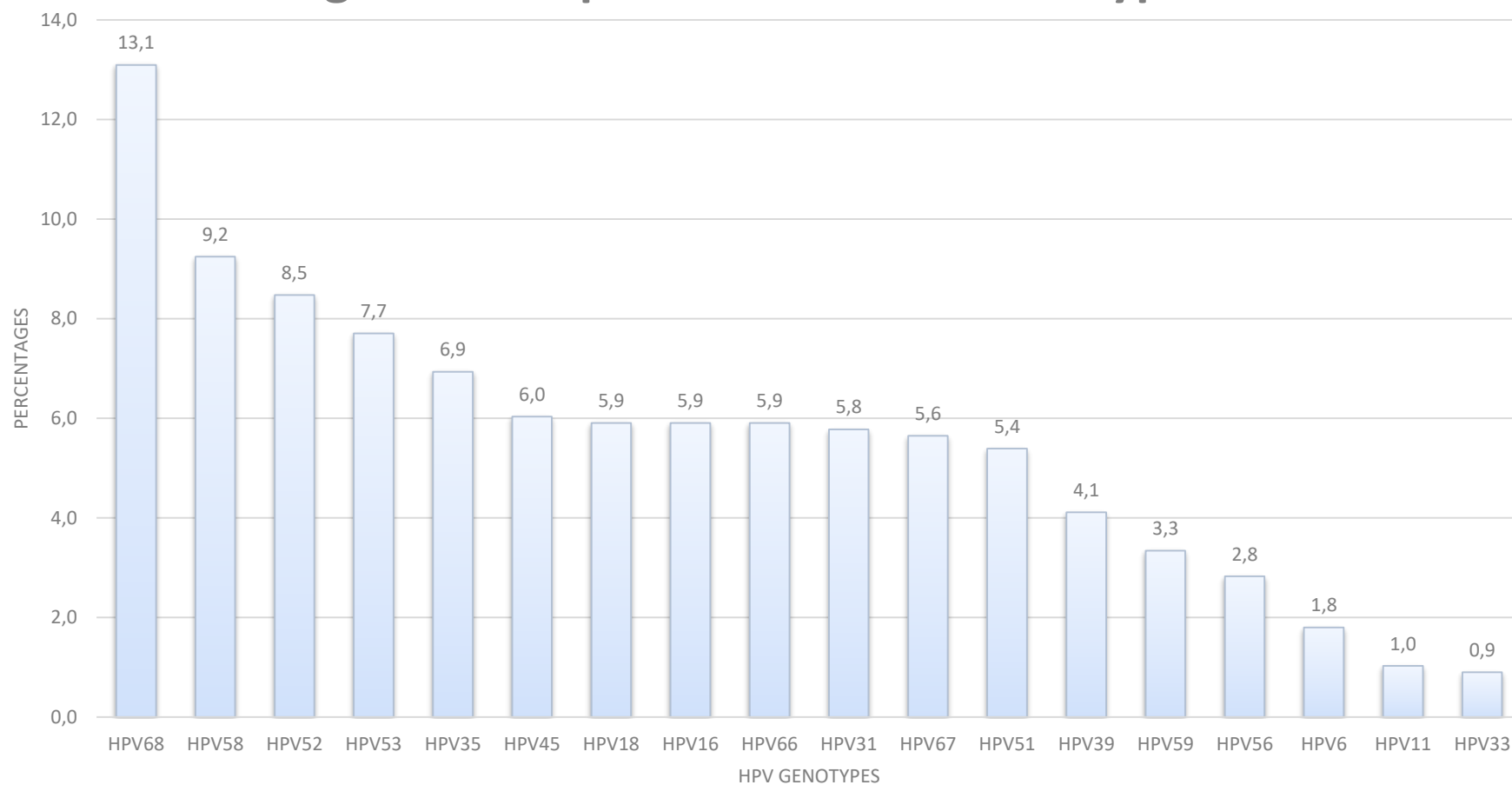
Age range	hrHPV + N (%)	lrHPV + N (%)	Negative N (%)	Total N (%)
25-29	65 (14.2)	8 (12.5)	100 (7.6)	173 (9.4)
30-39	88 (19.3)	16 (25.0)	271 (20.4)	375 (20.3)
40-49	142 (31.1)	18 (28.1)	419 (31.6)	579 (31.4)
50-59	99 (21.7)	16 (25.0)	368 (27.8)	483 (26.2)
60-69	54 (11.8)	5 (7.8)	148 (11.1)	207 (11.2)
70-79	9 (1.9)	1 (1.6)	18 (1.3)	28 (1.5)
80+	0 (0.0)	0 (0.0)	1 (0.1)	1 (0.1)
Total	457 (100.0)	64 (100.0)	1325 (100.0)	1846 (100.0)

Distribution of HPV genotypes

- Among the 521 samples which tested positive for HPV, 779 strains were isolated of which 18 genotypes were identified (6,11,16,18,31,33,35,39,45,51,52,53,56,58,59,66,67and 68).

Genotypes	Frequency	%
HPV68	102	13.1
HPV58	72	9.2
HPV52	66	8.5
HPV53	60	7.7
HPV35	54	6.9
HPV45	47	6.0
HPV18	46	5.9
HPV16	46	5.9
HPV66	46	5.9
HPV31	45	5.8
HPV67	44	5.6
HPV51	42	5.4
HPV39	32	4.1
HPV59	26	3.3
HPV56	22	2.8
HPV6	14	1.8
HPV11	8	1.0
HPV33	7	0.9
TOTAL	779	100.0

Figure 1. Proportions of HPV Genotypes





Conclusion

- Prevalence of HPV infection was 28.2 %.
- **HPV 68 was the most prevalent HR-HPV types** (same result with Ali-Risasi , 2008 on 54 HIV+ women with cervical dysplasia)
- Order : 68, 58, 52, 53, 35, 45, 18, 16, 66, 31, 67, 51, 39, 59, 56, 6, 11, 33.
- Combined HPV 16/18 come in second position.
- Nonavalent vaccine (Gardasil-9: 6, 11, 16, 18, 31, 33, 45, 52, and 58. Does not cover HPV 68, 53, 35, 66, 67
- These results should be corroborated by the genotype profile which will be found in cervical cancer cases.
- Before concluding about effective vaccination for our settings.

