



HPV infection: Epidemiological- Molecular study in a cohort of women in Kinshasa



CTB

**WOMEN
PROFILE**
for AFRICA

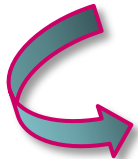
HPV testing

- ✓ Collection of **cervical samples** is not always easy
 - in resource-limited settings
 - in populations where these procedures may be less well accepted (ex. for young age or socio-cultural/religious implications)



ALTERNATIVE APPROACH

- **Urine sample** for the detection of HPV infection
 - non-invasive
 - more accessible and acceptable to women
 - less expensive
 - bypasses medical examination
 - even easier to perform than self-collected vaginal swabs



consequently, the screening coverage could be increased primarily by reaching populations in less developed regions

HPV Testing from Dried Urine Spots (DUS)

DRC HEALTHCARE FACILITIES

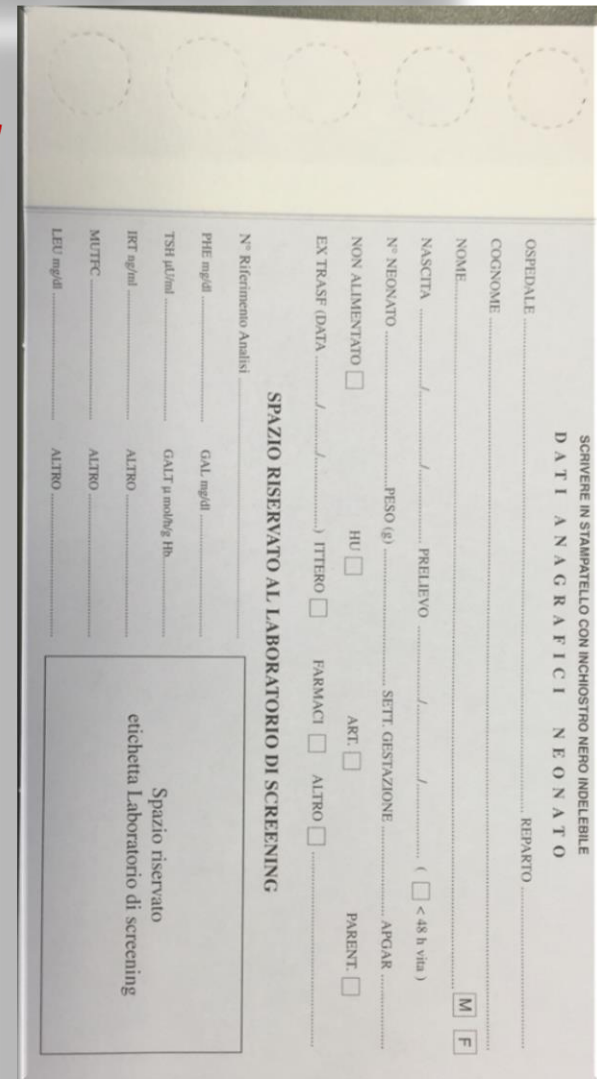
- **50 μ L** of urine samples were spotted on **5 preprinted circles** on a filter paper
- DUS was **dried for 3h**
- DUS was **stored** in a paper bag in a dry place at **RT (25–30°C)**

Urine samples collection and DUS preparation

November 2014 - January 2015

N = 456

Asymptomatic women, 30-49 years of age



SPAZIO RISERVATO AL LABORATORIO DI SCREENING

etichetta Laboratorio di screening

SPAZIO RISERVATO AL LABORATORIO DI SCREENING

COGNOME _____

PRENOME _____

NASCITA _____ / _____ / _____ PRELIEVO _____ (< 48 h vita)

N° NEONATO _____ PESO (g) _____ SETT. GESTAZIONE _____ AFGAR _____

NON ALIMENTATO HU ART. PARENT.

EX TRASF. (DATA _____) ITTERO FARMACI ALTRO

N° Riferimento Analisi _____

PHE mg/dl _____ GAL mg/dl _____

TSH μ U/ml _____ GALT μ mol/kg Hb _____

IRT mg/dl _____ ALTRO _____

MUTTC _____ ALTRO _____

LEU mg/dl _____ ALTRO _____

OSPEDALE _____

REPARTO _____

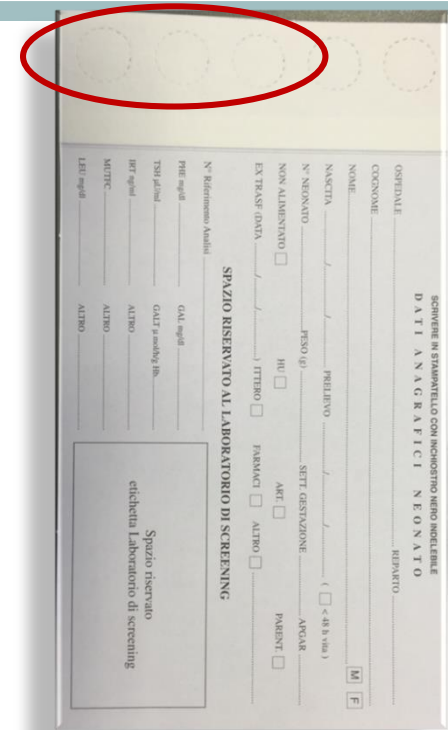
SCRIVERE IN STAMPATELLO CON INCHIOSTRO NERO INDELEBILE

DATE ANAGRAFICI NEONATO

M | F

UNIVERSITY OF MILAN, STIs LABORATORY

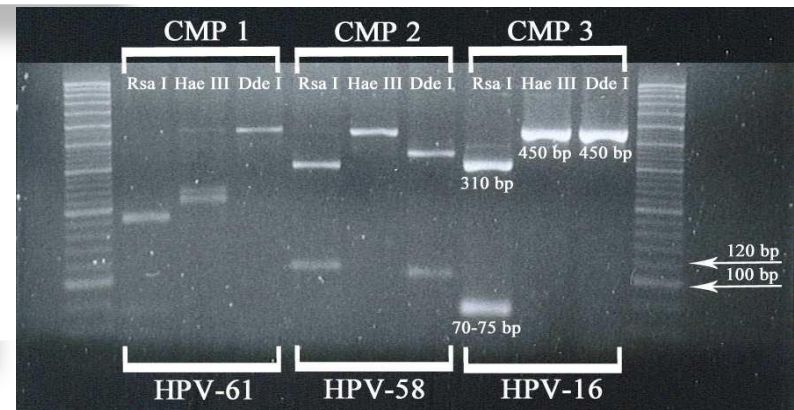
- **3 circles** were cut out using a sterile scalpel blade, transferred into 1mL of Lysis Buffer, incubated on a roller mixer for 30' at RT and then centrifuged for 15'' at 1500 xg
- **Nucleic acids extraction:** lysate (750µL) was extracted using the NucliSENS EasyMAG method
- **HPV detection:** nested PCR amplifying a fragment of 150 bp of **ORF L1** region
- **HPV genotyping:** first step (450 bp) of HPV positive samples was genotyped using RFLP technique



HPV detection and genotyping (31/03/2015)

N = 242/456 (53%)

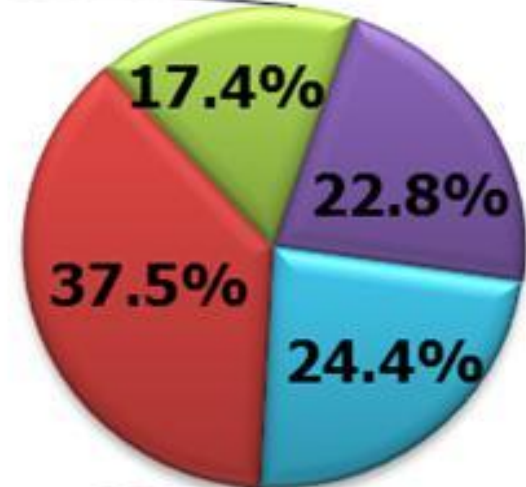
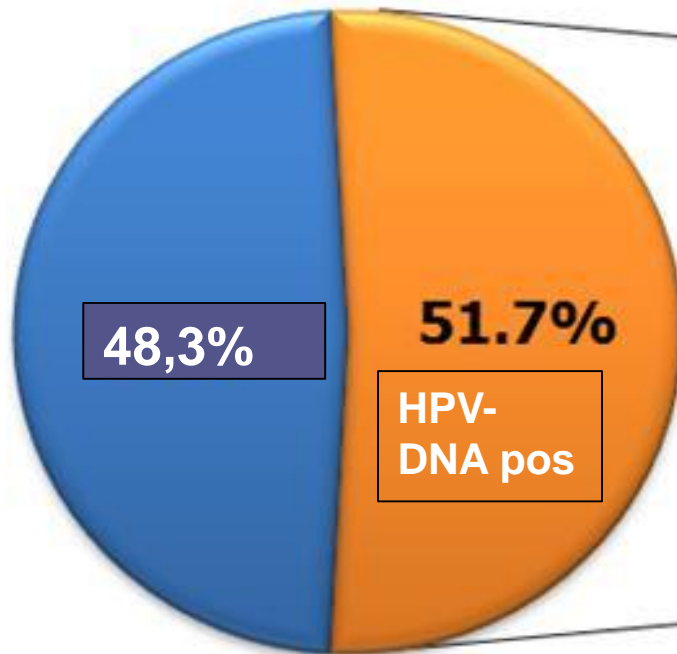
(all DUS prepared in November-December 2014)



HPV genotyping (RFLP technique)

HPV Detection and Genotyping

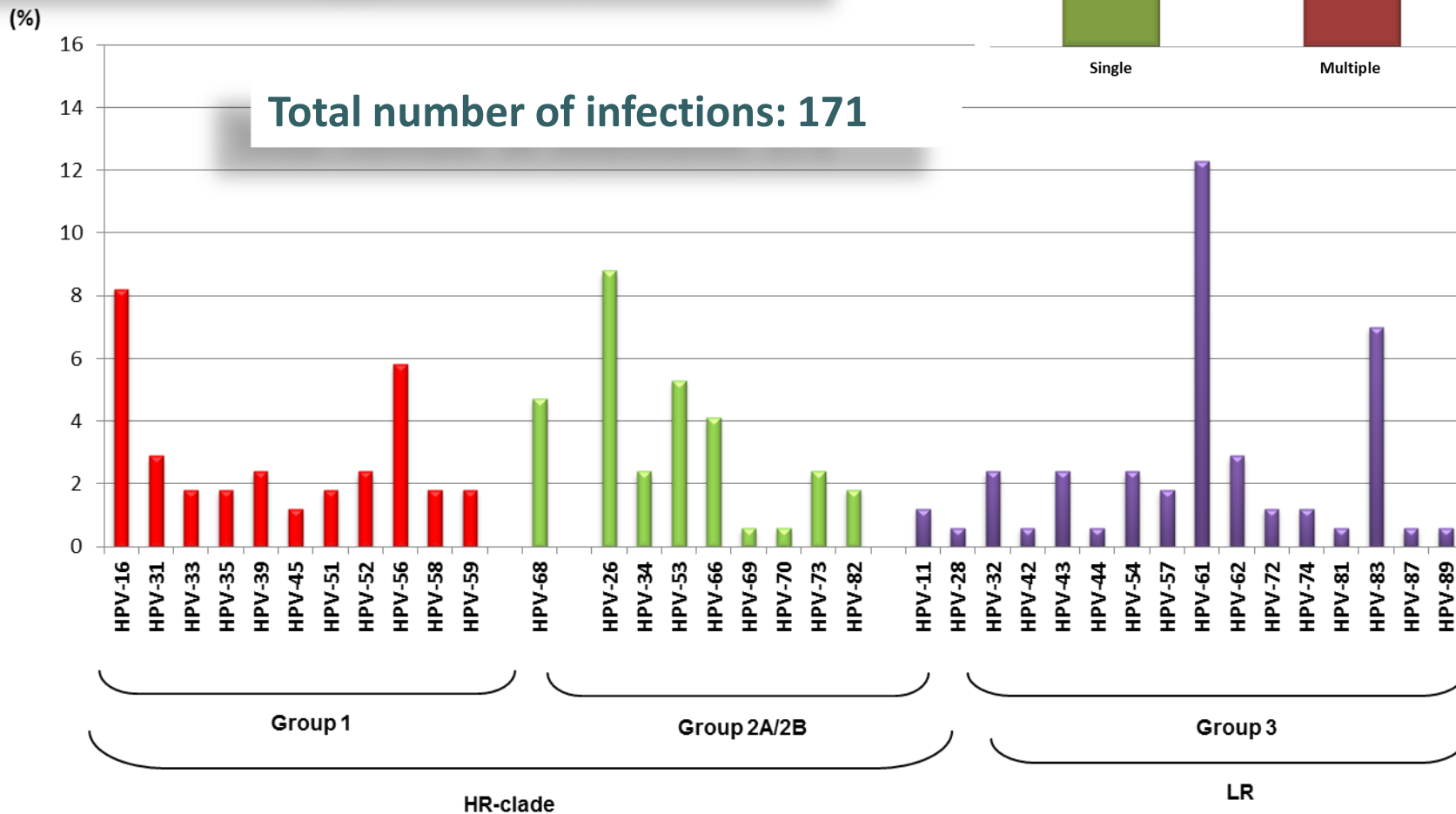
Sample: 447 women



20,5% positive groupe 1

■ HPV-DNA NEG ■ HR Group 1 ■ HR Group 2A-2B ■ LR Group 3 ■ NT

HPV Genotype distribution



What these results suggest?

- ✓ HPV prevalence (51,7%) is high, but not so far from that observed in studies conducted in Africa using the same molecular methods in women with normal cytology (Kenya: about 40%, Mozambique: 32-41%)
 - ✓ The genotype distribution is similar to that found in women of other regions, including those in developed countries (and Italy)
 - ✓ More than 60% of HPV-DNA positive women is infected with at least one genotype of HR-clade, about 40% with HR genotypes of Group 1
 - ✓ These data, support the need for prevention interventions targeted at women of this age group (> 30 yrs)
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- ✓ DUS could be a useful tool for planning cervical cancer screening strategies, especially in less developed, rural regions
 - ✓ DUS could also be useful for
 - epidemiological/virological surveillance where pelvic examination is not practical (ex. post-vaccination surveillance in adolescent women) or where other strategies are difficult to apply
 - monitoring of type-specific prevalence (vaccine-preventable HPV types - other non-vaccine types)





Thank you for your attention



WOMEN PROFILE

for AFRICA

In alcuni paesi un semplice pap test
ti può salvare la vita.

Fondazione Veronesi e Cesvi,
insieme, favorano perché in Congo la
salute della donna diventi un diritto,
come lo è per noi.

WOMEN PROFILE FOR AFRICA
È UN PROGETTO PER LA SALUTE FEMMINILE DA



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PER IL PROGRESSO DELLE SCIENZE

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