

Efficacy of Late HPV Vaccination in Young HIV+ MSM

Eugenio Nelson Cavallari¹, **Letizia Santinelli**¹, Luca Maddaloni¹, Eleonora Motta¹, Mirko Scordio², Federica Frasca², Giancarlo Ceccarelli¹, Carolina Scagnolari², Stefano Arcieri³, Alessandra Pierangeli², Claudio M Mastroianni¹, Gabriella d'Ettore¹

¹Sapienza University - Department of Public Health and Infectious Diseases, Rome, Italy, ²Sapienza University - Department of Molecular Medicine, Rome, Italy, ³Sapienza University - Department of Surgical Sciences, Rome, Italy

BACKGROUND

- Men who have sex with men (MSM), and in particular HIV+ MSM, show the greatest risk of anal HPV infection and the highest incidence of anal cancer
- HPV vaccine should be ideally administered at an early age, before the first sexual intercourse
- Since routine administration of HPV vaccine to young boys has begun only in recent years, currently the majority of immunized adult MSM individuals underwent vaccination after sexual debut
- In the present study we aimed to evaluate vaccination rate and prevalence of anal HPV infection and anal dysplasia (squamous intraepithelial lesion, SIL) in HIV+ and HIV- MSM aged <45 years that received HPV vaccination after the first sexual intercourse

METHODS

- 142 MSM, 110 HIV+ and 32 HIV-, younger than 45 years were included in the present study
- All enrolled subjects underwent anal HPV DNA test for HPV identification and genotyping
- The presence of anal dysplasia was assessed through anal cytology and/or anal histology from anal biopsies collected during high resolution anoscopy.

HPV vaccination is useful in reducing the incidence of anal dysplasia in HIV+ MSM <45 years, even if performed after sexual debut

RESULTS

- Vaccination rate was similar between HIV+ and HIV- participants (20% vs. 31.3%; p=0.169)
- 76.3% of HIV+ participants and 57.1% of HIV- participants tested positive at anal HPV DNA test (p=0.042)
- Anal SIL of any grade was observed in 76.3% of HIV+ individuals and 53.6% of HIV- subjects (p=0.017)
- The prevalence of anal HPV infection was similar between vaccinated and unvaccinated HIV+ subjects (72.7% vs. 77.3%; p=0.864)
- Among vaccinated participants, HPV DNA tested positive in 72.7% of HIV+ and 33.3% of HIV- subjects (p=0.041)
- On the other hand, prevalence of anal HPV infection was similar between HIV+ and HIV- unvaccinated individuals (77.3% vs. 68.4%; p=0.415)

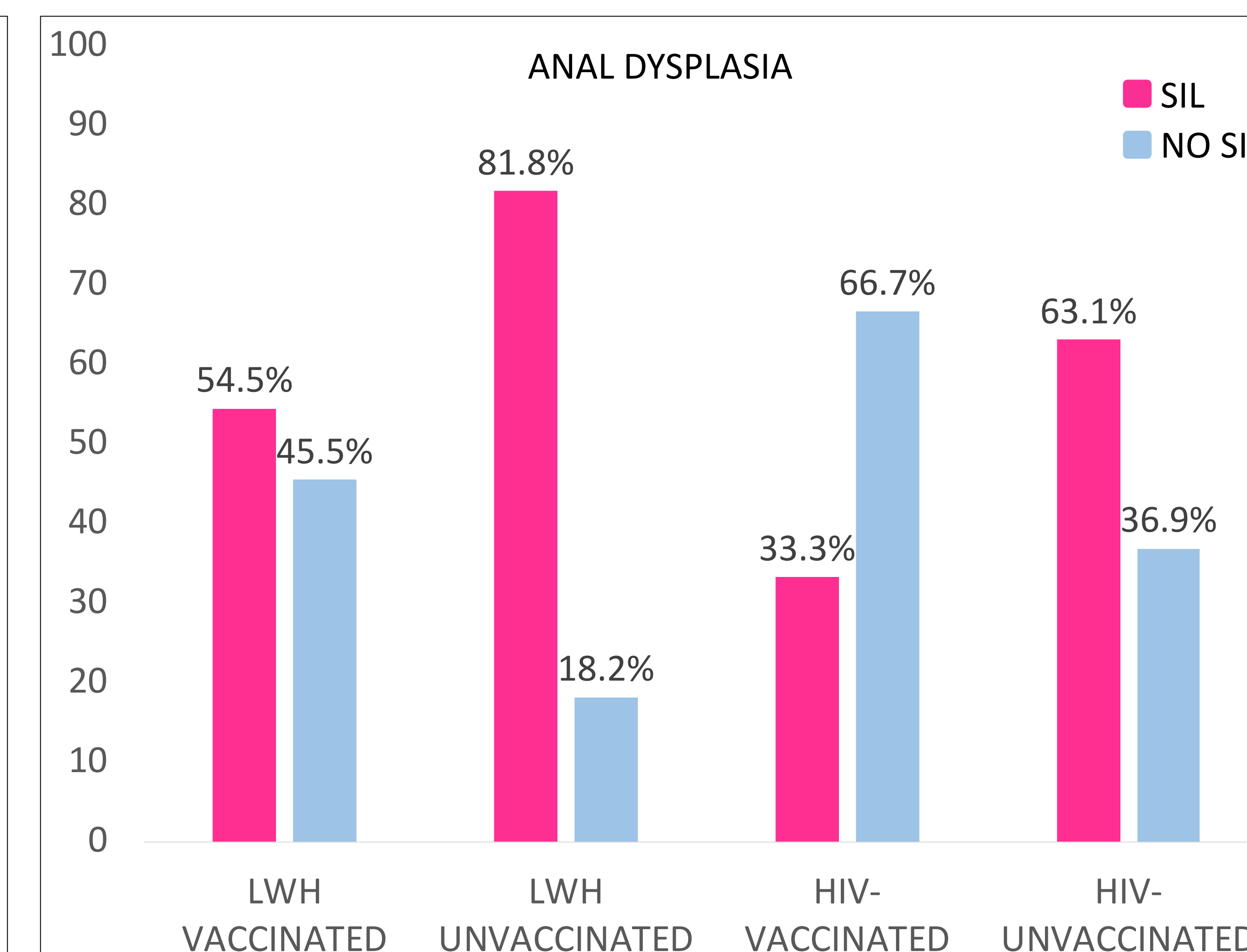
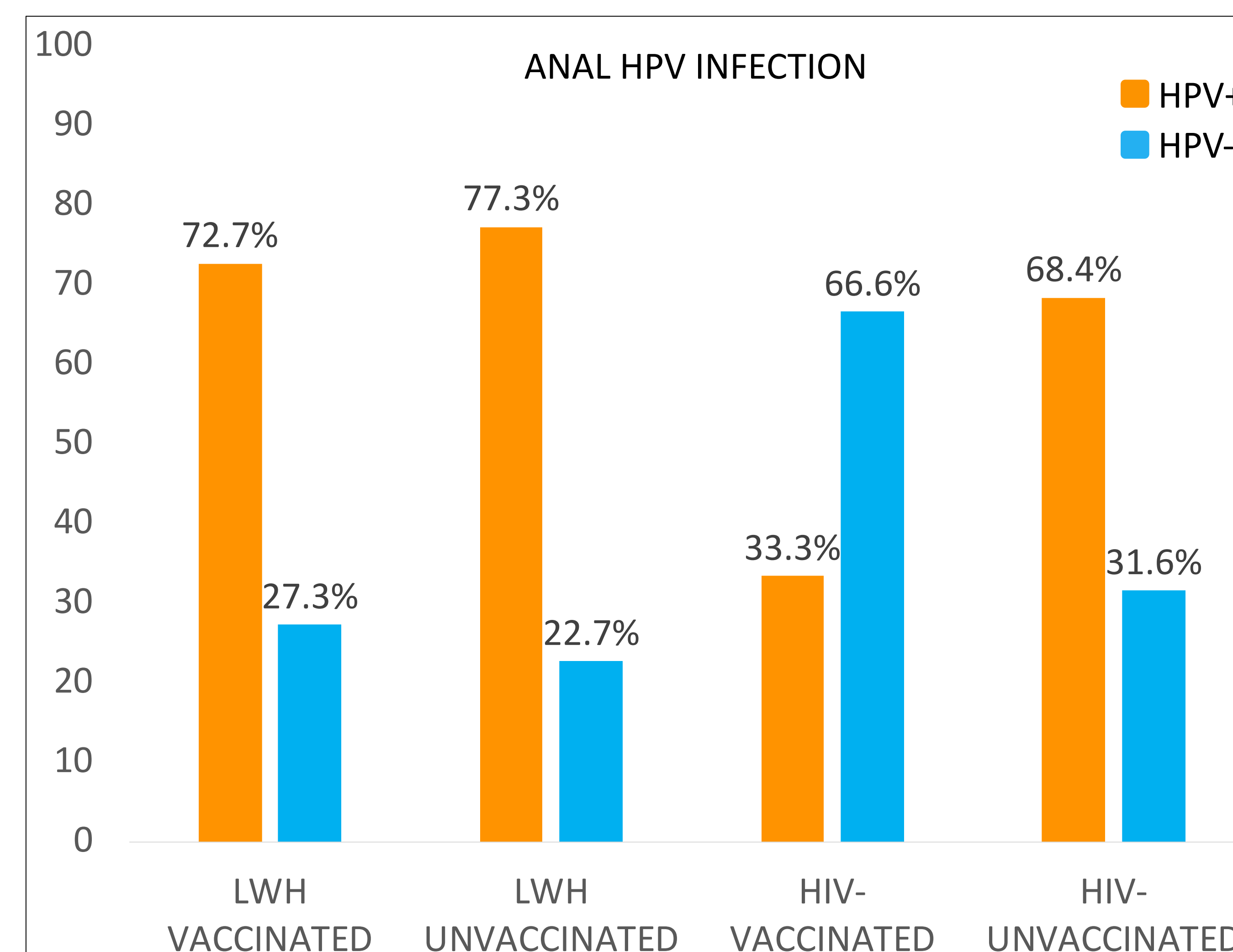
- Among HIV+ participants, anal SIL was observed in 54.4% of vaccinated and 81.8% of unvaccinated individuals (p=0.01)
- Among vaccinated participants, the presence of anal SIL was detected in 54.5% of HIV+ and 33.3% of HIV- vaccinated participants (p=0.283)
- In unvaccinated participants SIL was detected in 81.8% of HIV+ and 63.1% of HIV- subjects (p=0.073)
- Being unvaccinated (OR 1.6; CI 95% 1.1-2.4), living with HIV (OR 2.8; CI 95% 1.2-6.6) and anal HPV infection (OR 6.7; CI 95% 2.9-15.4) were associated to an increased risk of anal dysplasia at multivariate analysis

CONCLUSIONS

- Uptake of HPV vaccination was low in both study groups
- Despite late vaccination, HIV+ participants showed an increased prevalence of anal HPV infection than HIV- subjects
- Vaccinated HIV+ participants showed a lower prevalence of anal dysplasia in respect to HIV+ unvaccinated individuals
- Even if administered after sexual debut, vaccination against HPV is useful in reducing the risk of anal dysplasia in HIV+ MSM aged < 45 years
- Immunization against HPV should be encouraged, particularly in this population

Contact: eugenionelson.cavallari@uniroma1.it
letizia.santinelli@uniroma1.it

	MSM LWH (110)	HIV- (32)	p value
Age	39 (21-45)	38 (20-44)	0.865
T CD4 nadir	418 cells/ μ L (281-584)	n.a.	n.a.
Current CD4	678 cells/ μ L (492-940)	n.a.	n.a.
HIV RNA	< 37 copies/ml	n.a.	n.a.
Vaccinated individuals	20%	31.3%	0.169
Age at vaccination	39 (28-43)	37 (24-43)	0.025
Years since vaccination	4 (1-8)	3 (1-4)	0.587
Infection by genotypes included in the vaccine among vaccinated	43.7%	66.6%	0.427
Infection by genotypes included in the vaccine among unvaccinated	50%	46.1%	0.745



	F value	p value	Odds ratio	95% CI
ANAL HPV INFECTION	26.795	<0.001	6.7	2.9 – 15.4
LWH	5.880	0.017	2.8	1.2 - 6.6
NOT VACCINATED	11.494	0.001	1.6	1.1 – 2.4
CIGARETTE SMOKER	0.911	0.341	1.4	0.7 – 3.1
OTHER STI	0.377	0.540	1.3	0.6 – 2.6
GONORRHEA	0.391	0.533	1.4	0.5 – 4.1