9° WORKSHOP NAZIONALE CISAI

PREVENZIONE
E GESTIONE
DELLE CO-MORBIDITÀ
ASSOCIATE
ALL'INFEZIONE DA HIV

OSPEDALE
SAN RAFFAELE

Le vaccinazioni nel paziente HIV positivo

Silvia Nozza

Ospedale San Raffaele Milano

FONDAZIONE ASIA

CISAI
Coordinamento
Italiano
Studio
Allergie e
Infezione da HIV

BARI | 21-22 MARZO 2019
CENTRO CONGRESSI PALACE HOTEL BARI

- Indicazioni alle vaccinazioni.
- Copertura vaccinale nei soggetti HIV positivi.
- Efficacia delle vaccinazioni.
- Effetto delle vaccinazioni sul quadro immunovirologico.

	BHIVA	SIMIT	CDC
Influenza	Tutti	Tutti	Tutti
Pneumococco			
- PVC13	Tutti	Tutti	Tutti
- PPV23	Fattori di rischio	Tutti	Tutti
Meningococco			
- MenACWY	Età/ fattori di rischio	Tutti	Tutti
- MenB	Età/ fattori di rischio	Tutti	Età/ fattori di rischio
HPV	Età/sesso (M<27; F/MSM<40; lesioni da HPV)	Età (M<27; F<46)	Età (M/F<27)
Epatite B	Tutti i non immuni	Tutti i non immuni	Tutti i non immuni
Epatite A	Tutti i non immuni con fattori di rischio	Tutti i non immuni con fattori di rischio	Tutti i non immuni con fattori di rischio
MPR	Tutti i non immuni, CD4>200	Tutti i non immuni, CD4>200	Tutti i non immuni, CD4>200
Varicella	Tutti i non immuni, CD4>200	Tutti i non immuni, CD4>200	Tutti i non immuni, CD4>200
Herpes zoster	IgG+, età, CD4>200	?	Età, CD4>200

Clinical Infectious Diseases

MAJOR ARTICLE

IDSA Infectious Diseases Society of America · hivma hiv medicine association · OXFORD

Impact of Human Immunodeficiency Virus on the Burden and Severity of Influenza Illness in Malawian Adults: A Prospective Cohort and Parallel Case-Control Study

Antonia Ho,[1,2] Stephen J. Aston,[1,2] Hannah Jary,[2,3] Tamara Mitchell,[2] Maaike Alaerts,[2] Mavis Menyere,[2] Jane Mallewa,[4,5] Mulinda Nyirenda,[4,5] Dean Everett,[1,2] Robert S. Heyderman,[2,6,a] and Neil French[1,2,a]

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Table 4. Risk Factors for Severe Influenza Presentation in Influenza-Positive Case Patients and Controls

	Participants, No./Total (%)		Univariable Analysis[c]		Multivariable Analysis[c,d]	
Characteristic	Case Patients (n = 56)[a]	Controls (n = 88)[b]	OR (95% CI)	*P* Value	OR (95% CI)	*P* Value
Male sex	28/56 (50)	43/88 (49)	0.96 (0.49–1.88)	.89	…	…
Age group, y			…	…	…	…
18–29	17/56 (30)	36/88 (41)	0.75 (0.32–1.73)	.32		…
30–39	22/56 (39)	25/88 (28)	1.40 (0.61–3.22)	…		…
≥40	17/56 (30)	27/88 (31)	1	…		…
HIV infected	39/56 (70)	26/88 (30)	5.47 (2.63–11.36)	<.001	4.98 (2.09–11.88)	<.001
Medical history				…		
Previous pulmonary tuberculosis	10/56 (18)	5/88 (6)	3.61 (1.16–11.20)	.03	…	…
Pneumonia in past 5 y	17/55 (31)	7/88 (8)	5.18 (1.98–13.53)	.001	6.49 (1.95–21.25)	.001
Body mass index <18.5 kg/m^2	12/53 (23)	9/88 (10)	2.57 (1.00–6.60)	.05		…

Invasive Pneumococcal Disease Among HIV-Infected and HIV-Uninfected Adults in a Large Integrated Healthcare System

Julia L. Marcus, PhD, MPH,[1] Roger Baxter, MD,[1] Wendy A. Leyden, MPH,[1] Dharushana Muthulingam, MD, MS,[2] Arnold Yee, MBA,[1] Michael A. Horberg, MD, MAS,[3] Daniel B. Klein, MD,[4] William J. Towner, MD,[5] Chun R. Chao, PhD,[6] Charles P. Quesenberry, Jr., PhD,[1] and Michael J. Silverberg, PhD, MPH[1]

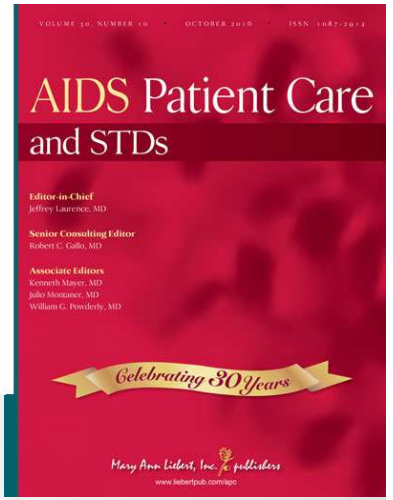

TABLE 2. RATE RATIOS COMPARING INVASIVE PNEUMOCOCCAL DISEASE (IPD) INCIDENCE BETWEEN HIV-INFECTED AND HIV-UNINFECTED ADULTS

Calendar era	*Unadjusted RR (95% CI)*	p	*Adjusted RR (95% CI)*	p
1996–1999	27.4 (16.2–46.1)	<0.001	18.5 (10.8–31.8)	<0.001
2000–2003	21.0 (11.5–38.6)	<0.001	13.4 (6.9–25.7)	<0.001
2004–2007	24.3 (12.0–49.1)	<0.001	15.6 (7.4–33.0)	<0.001
2008–2009	8.1 (3.4–19.5)	<0.001	5.4 (2.2–13.5)	<0.001
2010–2011	9.7 (4.1–23.1)	<0.001	6.6 (2.7–16.1)	<0.001

Adjusted RRs derived from Poisson models, including variables for age, sex, race/ethnicity, SES, smoking, diabetes, hypertension, stroke, CHD, cancer, and PPV23 use.

CHD, coronary heart disease; CI, confidence interval; IPD, invasive pneumococcal disease; PPV, pneumococcal polysaccharide vaccine; RR, rate ratio; SES, socioeconomic status.

Simmons et al. BMC Medicine (2015) 13:297
DOI 10.1186/s12916-015-0538-6

BMC Medicine

RESEARCH ARTICLE Open Access

Risk of invasive meningococcal disease in children and adults with HIV in England: a population-based cohort study

Ruth D. Simmons[1*], Peter Kirwan[2], Kazim Beebeejaun[1], Andrew Riordan[3], Ray Borrow[4], Mary E. Ramsay[1], Valerie Delpech[2], Samuel Lattimore[1] and Shamez Ladhani[1]

Table 3 Incidence of invasive meningococcal disease (IMD) in adults and relative risk by HIV status and capsular group in England during 2011–2013

		Incidence of meningococcal				
Capsular group	Age group (years)	Persons co-infected with HIV	Uninfected persons	Rate ratio	95 % CI	*P* value
All	All	6.6	1.4	4.5	(2.7, 7.7)	<0.001
	16–24	44.8	1.7	26.8	(8.7, 82.8)	<0.001
	25–44	4.4	0.4	11.9	(5.0, 28.2)	<0.001
	45–64	5.9	0.6	10.5	(4.4, 25.1)	<0.001
ACYW	All	4.7	0.3	16.0	(8.7, 29.6)	<0.001
	16–24	29.9	0.4	73.7	(18.8, 289.4)	<0.001
	25–44	3.5	0.1	26.6	(10.3, 68.5)	<0.001
	45–64	4.7	0.2	21.8	(8.4, 56.9)	<0.001
B	All	1.9	1.1	1.6	(0.6, 4.3)	0.32
	16–24	14.9	1.3	11.8	(1.7, 83.6)	0.002
	25–44	0.9	0.2	3.7	(0.5, 26.1)	0.16
	45–64	1.2	0.3	3.5	(0.5, 24.4)	0.19
C	All	1.4	0.05	27.1	(8.9, 82.4)	<0.001
	16–24	-	0.1	-	-	-
	25–44	1.8	0.05	35.1	(9.4, 131.4)	<0.001
	45–64	1.2	0.03	32.0	(4.8, 212.8)	<0.001
Y	All	2.3	0.1	15.8	(6.7, 37.7)	<0.001
	16–24	14.9	0.2	73.7	(10.7, 509.9)	<0.001
	25–44	0.9	0.1	15.4	(2.3, 105.3)	<0.001
	45–64	3.6	0.1	32.0	(10.7, 95.6)	<0.001
W	All	0.9	0.1	10.2	(2.6, 40.5)	<0.001
	16–24	14.9	0.1	107.7	(15.8, 736.3)	<0.001
	25–44	0.9	0.02	35.1	(5.4, 227.2)	<0.001
	45–64	0.0	0.1	-	-	-

PLOS ONE

RESEARCH ARTICLE

Tracking a serial killer: Integrating phylogenetic relationships, epidemiology, and geography for two invasive meningococcal disease outbreaks

Ifeoma Ezeoke[1☯], Madeline R. Galac[2☯], Ying Lin[3], Alvin T. Liem[4,5], Pierce A. Roth[4,5], Andrew Kilianski[2], Henry S. Gibbons[4], Danielle Bloch[1], John Kornblum[3], Paula Del Rosso[1], Daniel A. Janies[2], Don Weiss[1]*

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Retchless et al. BMC Genomics (2018) 19:176
https://doi.org/10.1186/s12864-018-4560-x

BMC Genomics

RESEARCH ARTICLE Open Access

Expansion of a urethritis-associated *Neisseria meningitidis* clade in the United States with concurrent acquisition of *N. gonorrhoeae* alleles

Adam C. Retchless[1], Cécilia B. Kretz[1,7], How-Yi Chang[1], Jose A. Bazan[2,3], A. Jeanine Abrams[4], Abigail Norris Turner[2], Laurel T. Jenkins[1], David L. Trees[4], Yih-Ling Tzeng[5], David S. Stephens[5,6], Jessica R. MacNeil[1] and Xin Wang[1*]

RESEARCH ARTICLE

Presence of multiple genotypes in subjects with HPV-16 infection is highly associated with anal squamous intraepithelial lesions in HIV-1 infected males

Cristina Rovelli[1], Andrea Poli[2], Laura Galli[2], Massimo Cernuschi[2], Andrea Marco Tamburini[3], Sara Racca[4], Giuseppe Tambussi[2], Serena Rolla[4], Luca Albarello[5], Riccardo Rosati[1,3], Adriano Lazzarin[1,2], Antonella Castagna[1,2], Silvia Nozza[2]*

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BRAZ J INFECT DIS 2016;20(5):487–493

The Brazilian Journal of
INFECTIOUS DISEASES

www.elsevier.com/locate/bjid

Original article

Vaccination status of people living with HIV/AIDS in outpatient care in Fortaleza, Ceará, Brazil

Gilmara Holanda da Cunha[a,*], Marli Teresinha Gimeniz Galvão[a], Camila Martins de Medeiros[a], Ryvanne Paulino Rocha[a], Maria Amanda Correia Lima[a], Francisco Vagnaldo Fechine[b]

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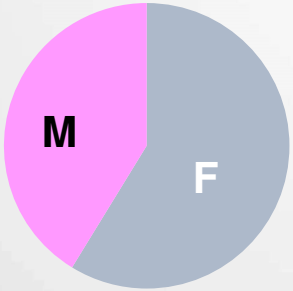
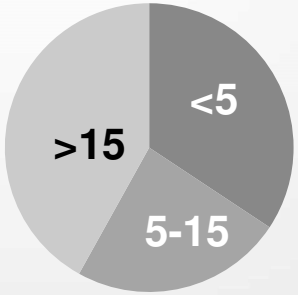
SIMIT
Società Italiana
di Malattie Infettive
e Tropicali

Un questionario è stato presentato agli iscritti SIMIT e ai partecipanti al convegno ICAR 2018:

- 28 item
  - ✓ 13 domande rivolte a tutti
  - ✓ 15 domande rivolte solo a curanti di persone con infezione da HIV



Genere

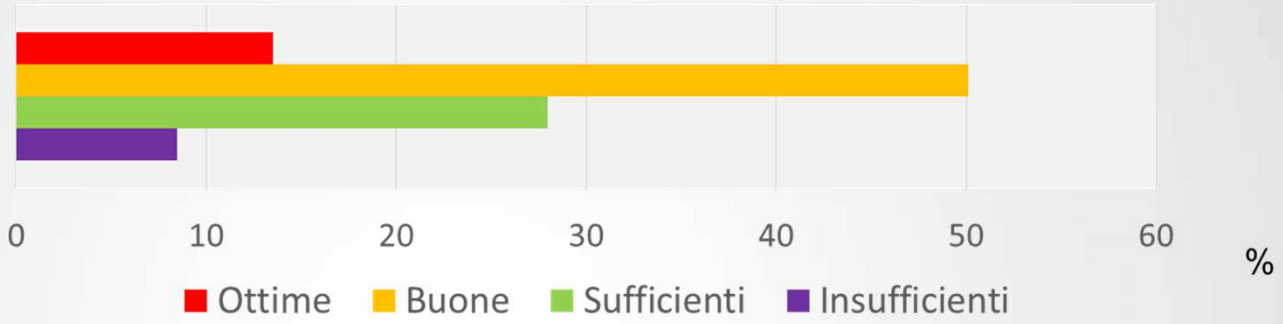


Anni di professione

Curanti di
pz HIV

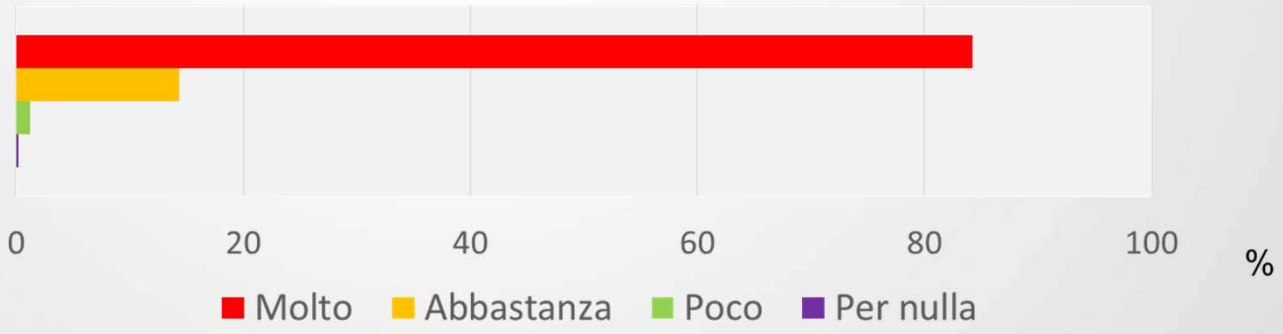
1

Come reputi le tue conoscenze generali sulle vaccinazioni nei pazienti HIV?



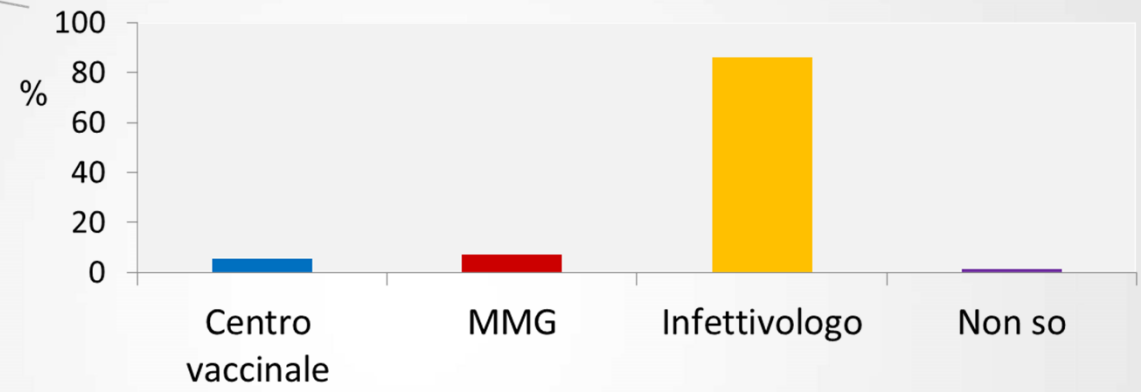
2

Quanto ritieni sia importante la pratica vaccinale nei pazienti HIV?



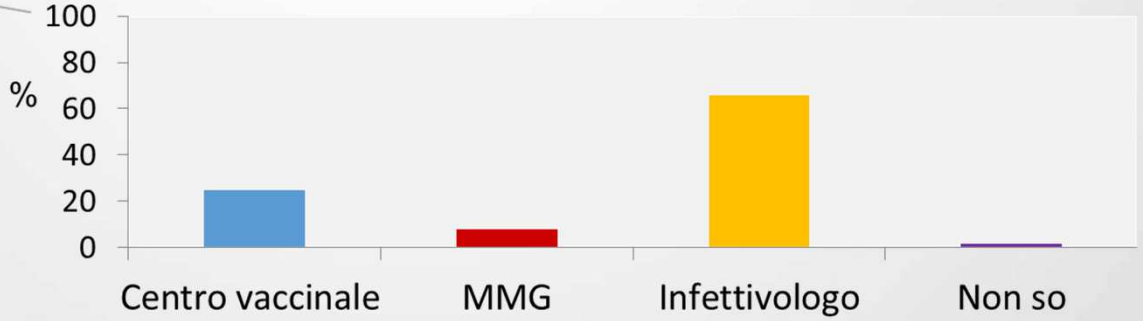
3

Quale figura professionale dovrebbe dare l'indicazione alla vaccinazione nei pazienti HIV+?



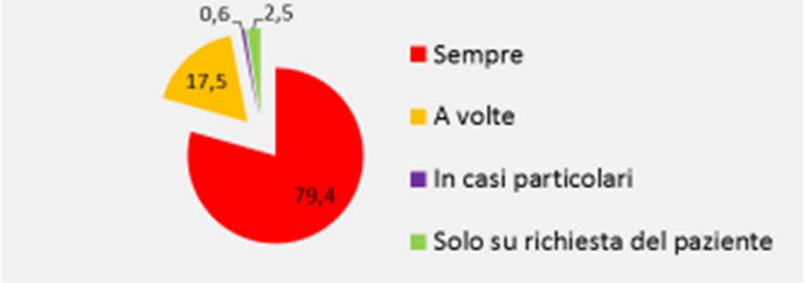
4

A chi ritieni competa raccogliere e aggiornare i dati sullo stato vaccinale del paziente HIV+?



1

Consigli ai tuoi pazienti HIV di eseguire le vaccinazioni raccomandate dalle LG?



2

Hai difficoltà a far eseguire le vaccinazioni che prescrivi ai tuoi pazienti HIV?

Principali informazioni ottenute

- La comunità di professionisti coinvolti nella gestione dei pazienti con infezioni da HIV sul territorio nazionale è altamente sensibilizzata sulla rilevanza delle vaccinazioni per la promozione della salute della popolazione affetta da HIV.

- Un'ottimale strategia vaccinale richiede una stretta collaborazione tra centri di cura e i centri vaccinali, così come, ove possibile, l'implementazione di modalità di offerta attiva dei vaccini all'interno del percorso di cura.

Ambulatorio vaccinale

- Vaccinazione anti pneumococcica (PCV13 e PPV23).
- Vaccinazione anti meningococcica (MenACWY e MenB).
- Vaccinazione anti HAV.
- Vaccinazione anti HBV.
- Vaccinazione anti HPV.

N=5146

PCV13
N=2252 (44%)

PPV23
N=278 (5%)

MenACWY
N=818 (16%)

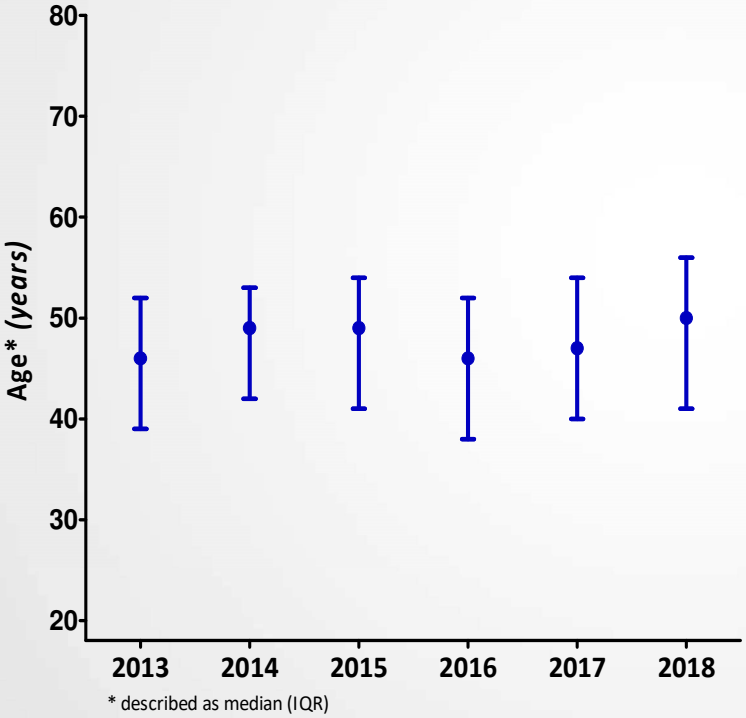
MenB
N=531 (10%)

HBV
N=701 (14%)

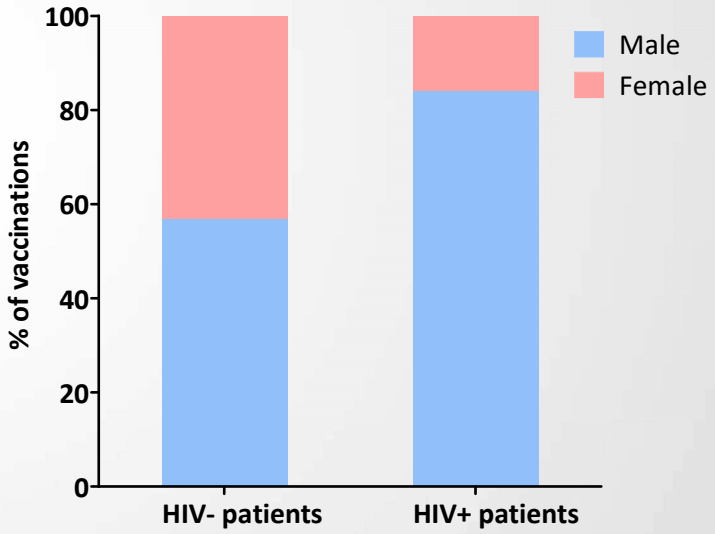
HAV
N=794 (15%)

HPV
N=60 (1,2%)

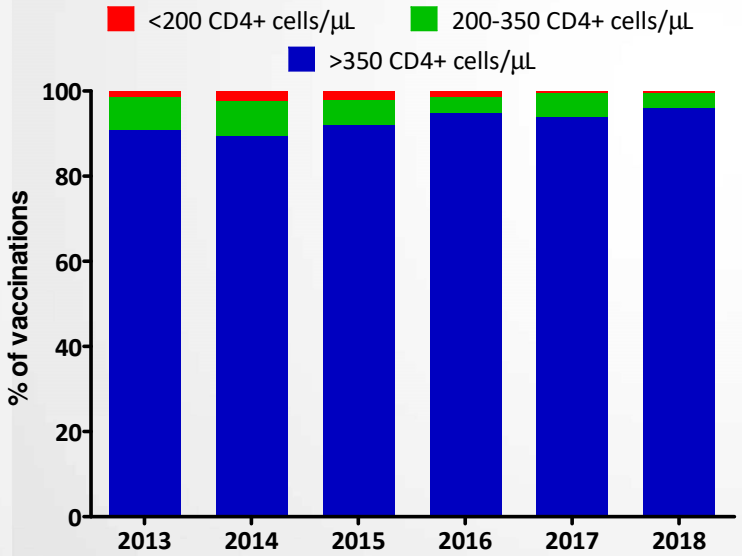
Characteristics at vaccination

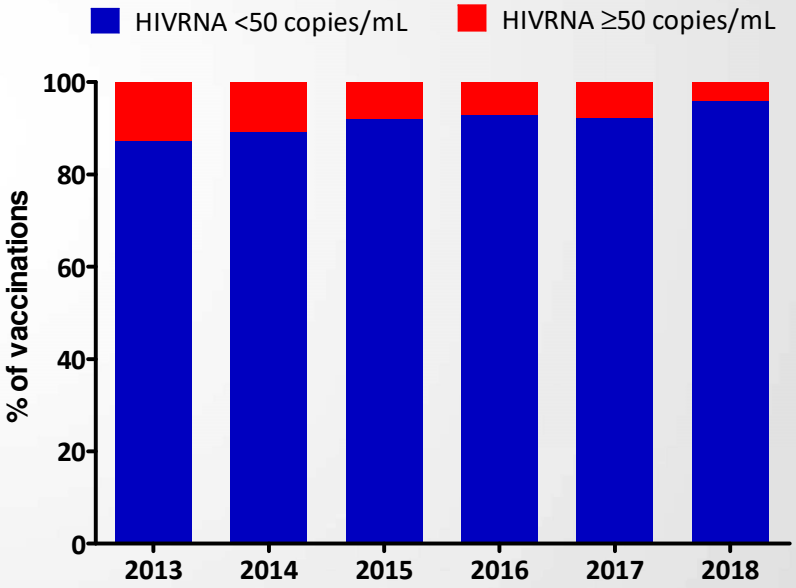


* described as median (IQR)



Immuno-virological status at vaccination





AIDS RESEARCH AND HUMAN RETROVIRUSES
Volume 34, Number 11, 2018

DOI: 10.1089/aid.2017.0070

Hepatitis B Virus Vaccination in HIV: Immunogenicity and Persistence of Seroprotection up to 7 Years Following a Primary Immunization Course

Laura Ambra Nicolini,[1,2] Federica Magne,[1] Alessio Signori,[3] Antonio Di Biagio,[2] Laura Sticchi,[1,4] Chiara Paganino,[1] Paolo Durando,[5,6] and Claudio Viscoli[1,2]

TABLE 3. COX REGRESSION ANALYSIS TO IDENTIFY PREDICTORS OF PERSISTENCE OF SEROPROTECTION

	Longitudinal control (n = *58*)			
Characteristics	*Loss of protective, HBsAb* (n = *14*)	*Protective HBsAb maintained* (n = *44*)	*HR (95% CI)*	p
Age (years), by tertiles, *n* (%)				.47
27–40	6/23 (26.1)	17/23 (73.9)	1.00 (ref)	
41–45	3/20 (15)	17/20 (85)	1.26 (0.63–2.51)	
46–67	5/15 (33.3)	10/15 (66.7)	1.66 (0.74–3.72)	
Sex, *n* (%)				.026
Males	9/27 (33.3)	18/27 (66.7)	1.00 (ref)	
Females	5/31 (16.1)	26/31 (83.9)	2.05 (1.09–3.86)	
CD4-T at baseline, median (IQR)	502.5 (292–646)	531.5 (412–673)	1.12 (1.01–1.23)[a]	.025
HIV-RNA on log-scale, median (IQR)	4.21 (1.24)	4.20 (1.17)	0.86 (0.63–1.17)	.33
CD4-T (cells/mm^3), nadir, median (IQR)	181.5 (58–269)	288 (120–370)	1.32 (1.08–1.61)[a]	.008
HBsAb, median (IQR)	207.5 (59–855)	944 (204–1,000)[b]	1.02 (0.96–1.08)[a]	.64
CD4-T time-updated, median (IQR)	751 (493–883)	774 (554–994)	1.16 (1.04–1.28)[a]	.008
HIV-RNA time-updated, median (IQR)	0 (0–7)	0 (0–0)	0.48 (0.02–12.18)[a]	.66

[a]Effect for 100 U increase of CD4.
[b]Effect for 100 U increase of HBsAb.

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SCIENTIFIC REPORTS

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Immunological efficacy of pneumococcal vaccine strategies in HIV-infected adults: a randomized clinical trial

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C. Sadlier[1,2], S. O'Dea[1], K. Bennett[3], J. Dunne[4], N. Conlon[4] & C. Bergin[1,2]

Conclusion

Our study suggests that combining PCV13 with PPSV23 elicits a greater magnitude of IgG and OPA immune response compared to PPSV23 alone in HIV-infected individuals with CD4 count >200 cells/mm^3 over the study period.

Further studies addressing clinical end points and identifying immune correlates of vaccine protection are warranted as HIV-infected individuals will continue to be a group who will benefit greatly from protection against pneumococcal disease.

Our study adds to evidence supporting the current pneumococcal vaccination recommendations in the United States and Europe for HIV-infected individuals.

Ongoing monitoring of pneumococcal disease trends, particularly in high risk patient groups including those with HIV infection is warranted to determine the optimal pneumococcal prevention strategy in the future particularly as extended valency vaccines become available.

Vaccine 34 (2016) 4799–4806

Contents lists available at ScienceDirect

Vaccine

journal homepage: www.elsevier.com/locate/vaccine

HIV viral suppression results in higher antibody responses in HIV-positive women vaccinated with the quadrivalent human papillomavirus vaccine

Deborah M. Money [a,b,c,*], Erin Moses [b], Sandra Blitz [d], Shannon M. Vandriel [a,b], Nancy Lipsky [b], Sharon L. Walmsley [c,d,e], Mona Loutfy [c,e,f], Sylvie Trottier [g], Fiona Smaill [h], Mark H. Yudin [i], Marina Klein [c,j], Marianne Harris [k,l], Jeffrey Cohen [m], Wendy Wobeser [n], Ari Bitnun [o,p], Normand Lapointe [q,r], Lindy Samson [s], Jason Brophy [s], Christos Karatzios [t,u], Gina Ogilvie [a,b,l,v], François Coutlée [w], Janet Raboud [d,x], HPV in HIV Study Group

Table 2
Comparison of peak antibody response by virologic suppression at the time of first vaccination.

HPV type	Suppressed viral load		Unsuppressed viral load		Unadjusted ratio of GMTs (95% CI)	*p* Value
	N	GMT (95% CI)	*N*	GMT (95% CI)		
Per-protocol						
6	80	654 (544–788)	24	324 (184–569)	2.02 (1.29–3.16)	<0.01
11	118	779 (673–901)	37	355 (257–489)	2.19 (1.60–3.00)	<0.0001
16	84	2493 (2060–3017)	28	1430 (961–2127)	1.74 (1.17–2.59)	<0.01
18	111	423 (342–523)	34	139 (89–216)	3.05 (1.94–4.80)	<0.0001
Modified intention-to-treat						
6	205	735 (629–858)	79	462 (337–632)	1.59 (1.16–2.18)	<0.01
11	205	707 (602–830)	79	348 (260–467)	2.03 (1.48–2.78)	<0.0001
16	205	2180 (1830–2597)	79	1244 (896–1727)	1.75 (1.24–2.48)	<0.01
18	205	314 (257–385)	79	117 (82–165)	2.70 (1.83–3.98)	<0.0001

GMT = geometric mean titer, CI = confidence interval.

9° WORKSHOP NAZIONALE CISAI

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Viral rebound after thirteen-valent pneumococcal vaccination in HIV-1 infected subjects on stable virological suppression

R. Dell'Acqua et al., submitted

FONDAZIONE ASIA

CISAI
Coordinamento Italiano Studio Allergie e Infezione da HIV

BARI | 21-22 MARZO 2019
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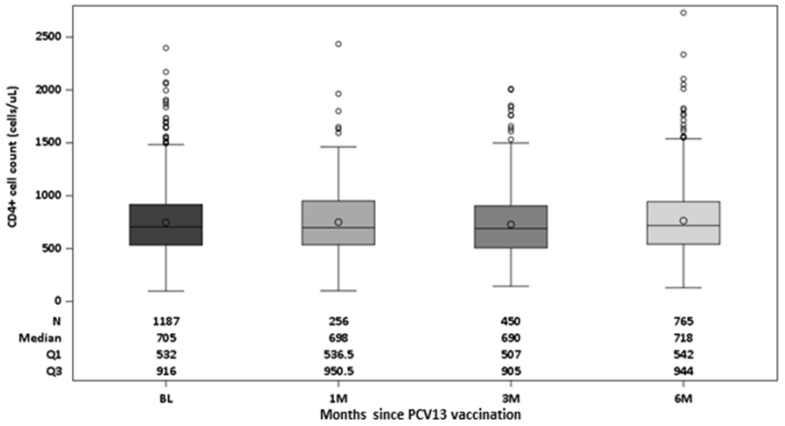
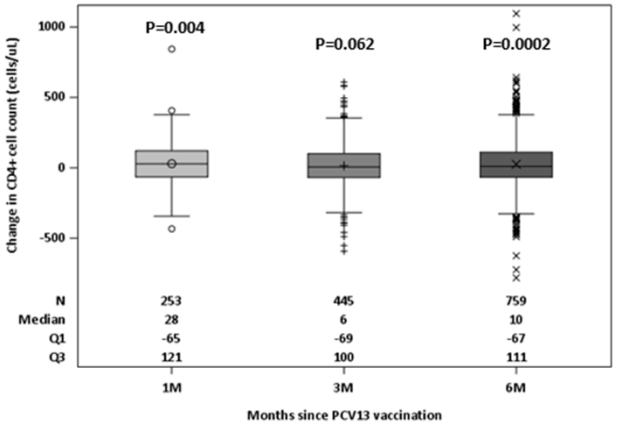
Aim of the study

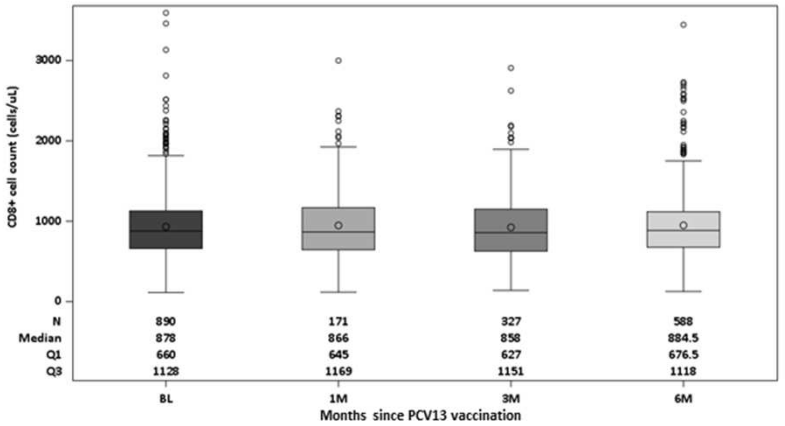
To assess the immune-virological outcomes in HIV-1 infected ART-treated patients on stable virological suppression who underwent vaccination with PCV 13 over 6 months.

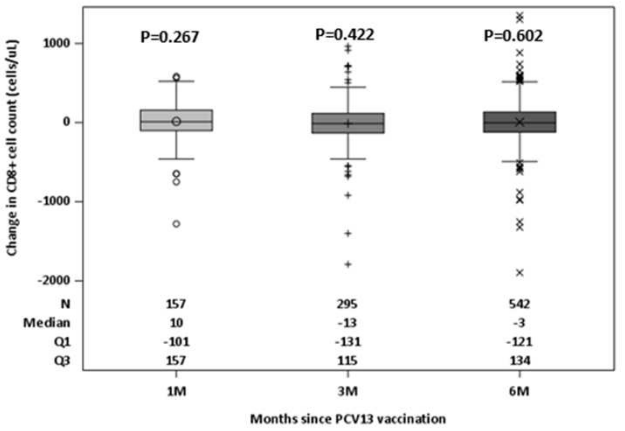
Characteristic	Overall (n=1197)	<1 copy/mL (n=960)	1-49 copies/mL (n=237)	P value
Age (years)	50.1 (44.0 – 55.3)	50.2 (44.2 – 56.0)	48.9 (42.7 – 54.0)	0.019
Male gender	1006 (84.0%)	793 (82.6%)	213 (89.9%)	0.0062
Years since HIV infection	15.0 (8.6 – 22-6)	15.7 (9.1 – 22.8)	13.0 (6.6 – 21.9)	0.005
Years on ART	12.1 (5.2 – 18.2)	12.7 (5.8 – 18.3)	9.1 (3.6 – 16.9)	0.0003
Nadir CD4 (cells/µL)	251 (144 – 360)	251 (148 – 355)	252 (126 – 374)	0.935
Years with HIV-RNA<50 copies/mL	4.7 (2.1 – 7.3)	5.0 (2.4 – 7.6)	3.0 (1.3 – 5.7)	<0.0001
CD4 (cells/µL)	705 (532 – 916)	701 (532 – 910)	723 (536 – 934)	0.555
CD8 (cells/µL)	878 (660 – 1128)	865 (645 – 1125)	914 (694 – 1138)	0.373
CD4/CD8 ratio	0.82 (0.58 – 1.13)	0.83 (0.58 – 1.14)	0.79 (0.57 - 1.07)	0.326
CD4/CD8 ratio >1	296 (33.2%)	243 (34%)	53 (29%)	0.217

Immunological outcomes





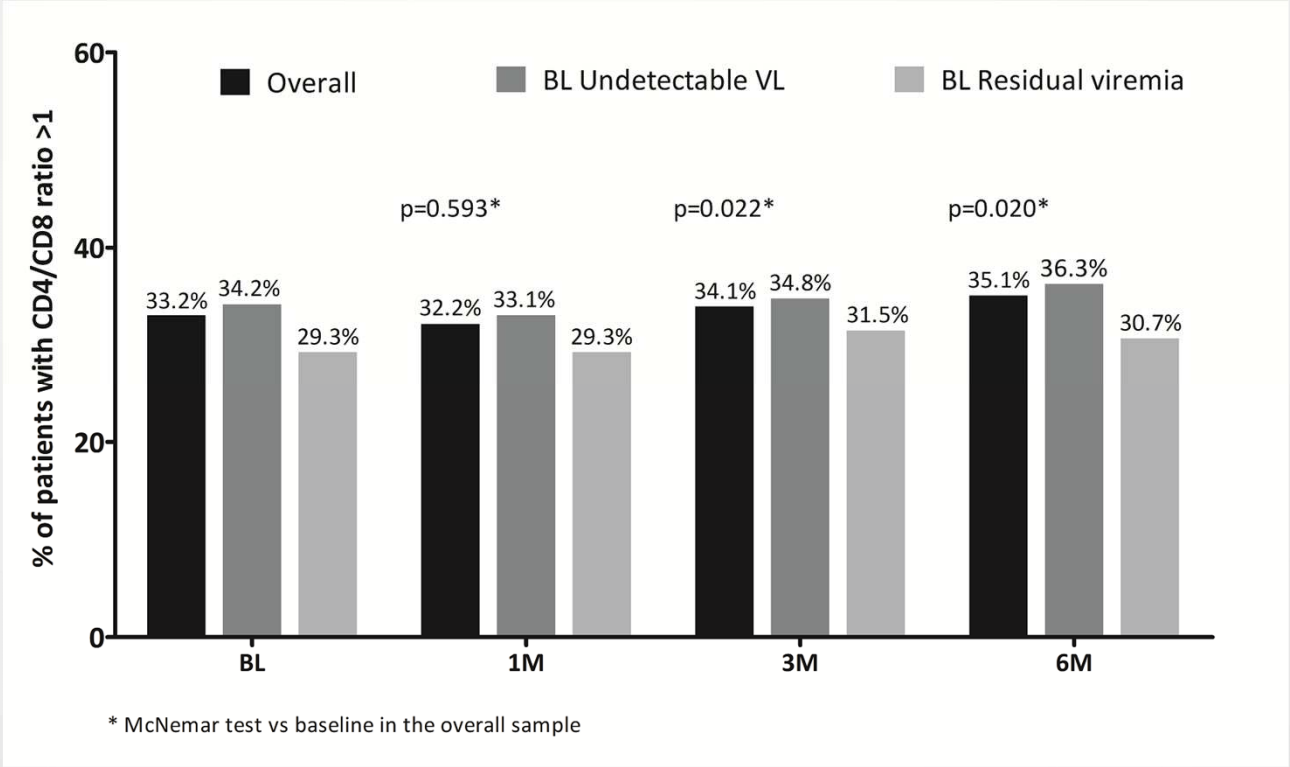




FONDAZIONE ASIA

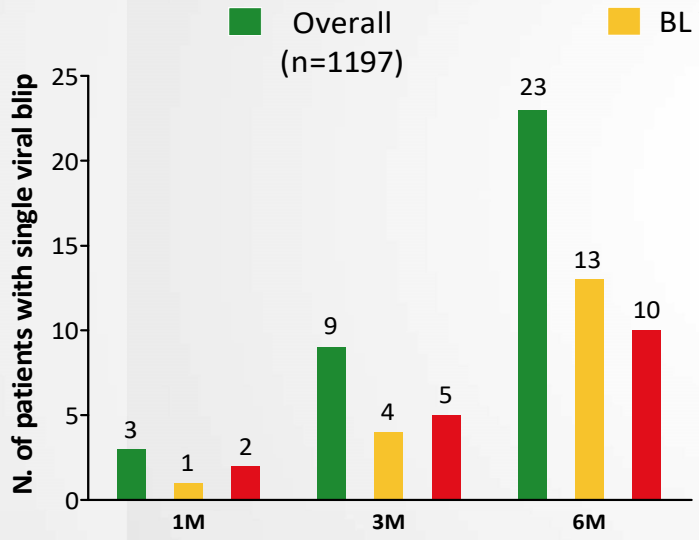
CISAI Coordinamento Italiano Studio Allergie e Infezione da HIV

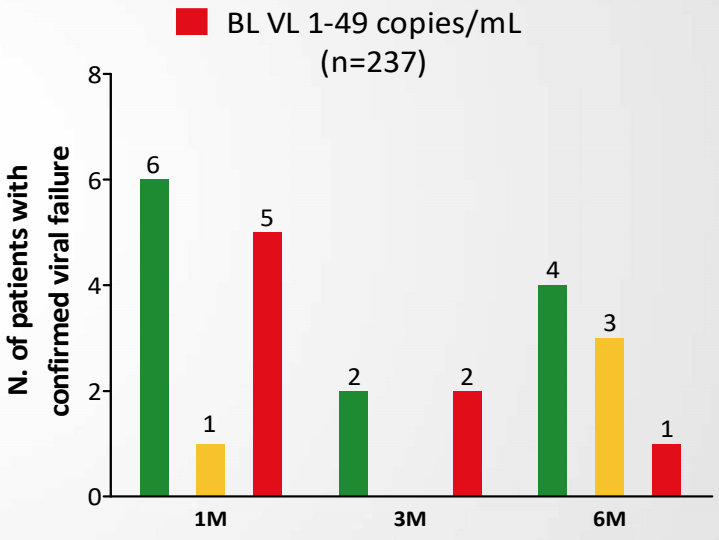
Immunological outcomes



* McNemar test vs baseline in the overall sample

Virological outcomes





N=35

Take home messages

- Indicazioni alle vaccinazioni.
- Copertura vaccinale nei soggetti HIV positivi.
- Efficacia delle vaccinazioni.
- Effetto delle vaccinazioni sul quadro immunovirologico.