

# Anal HPV disease and treatment

## Prevention of HPV-related disease of the anus: primary and secondary prevention

HPV Prevention and Control Board  
Antwerp, Belgium  
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# Disclosures

Merck - Consultant/Honorarium Recipient

Vir Biotechnologies - Consultant/Honorarium Recipient

Virion Therapeutics - Consultant/Stock Shareholder

Roche Diagnostics - Consultant/Honorarium Recipient

Spotlight Therapeutics - Consultant/Honorarium Recipient

Abbott - Consultant/Honorarium Recipient

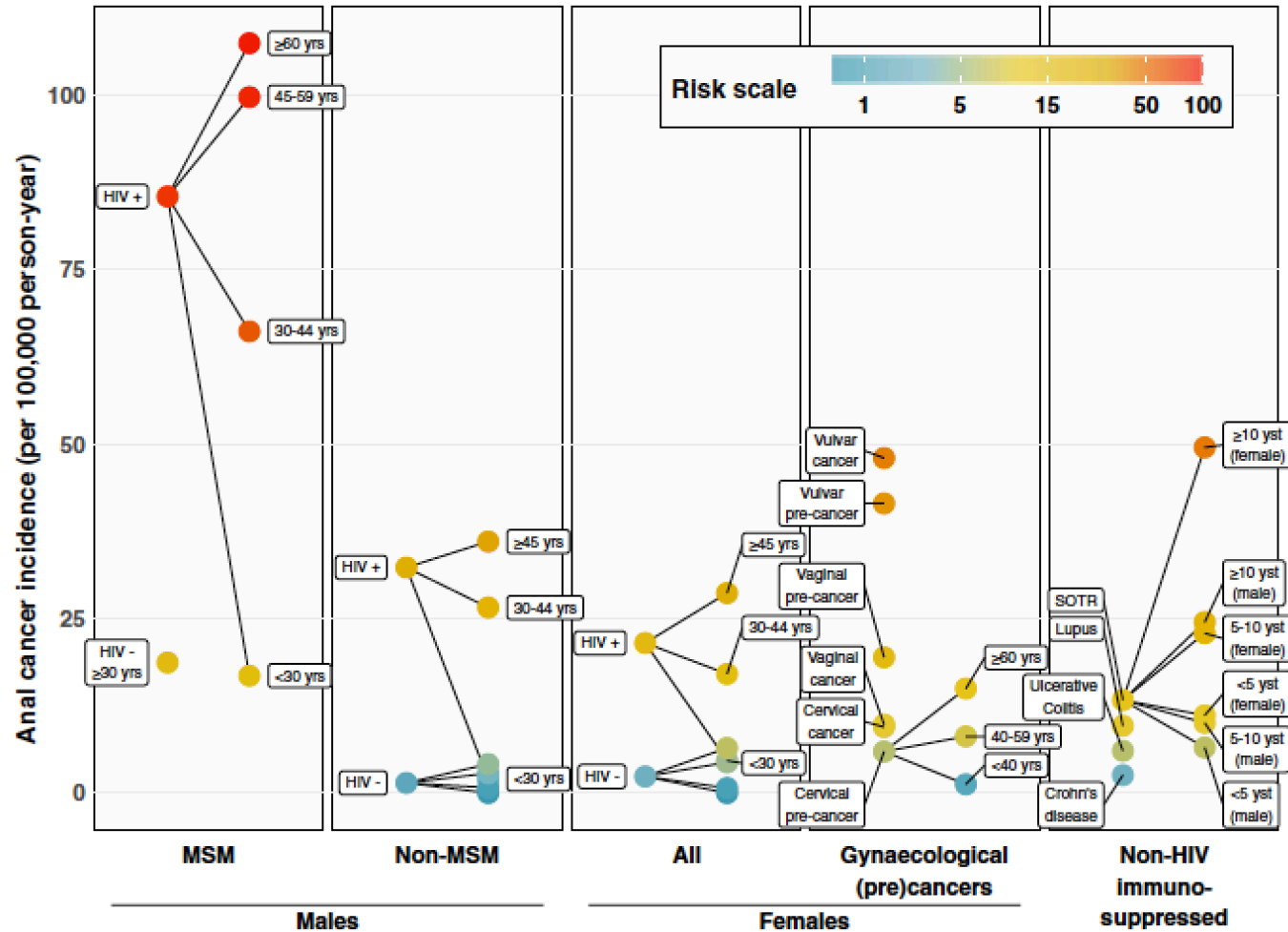
GSK- Consultant/Honorarium Recipient

Asieris Pharmaceuticals- Consultant/Honorarium Recipient

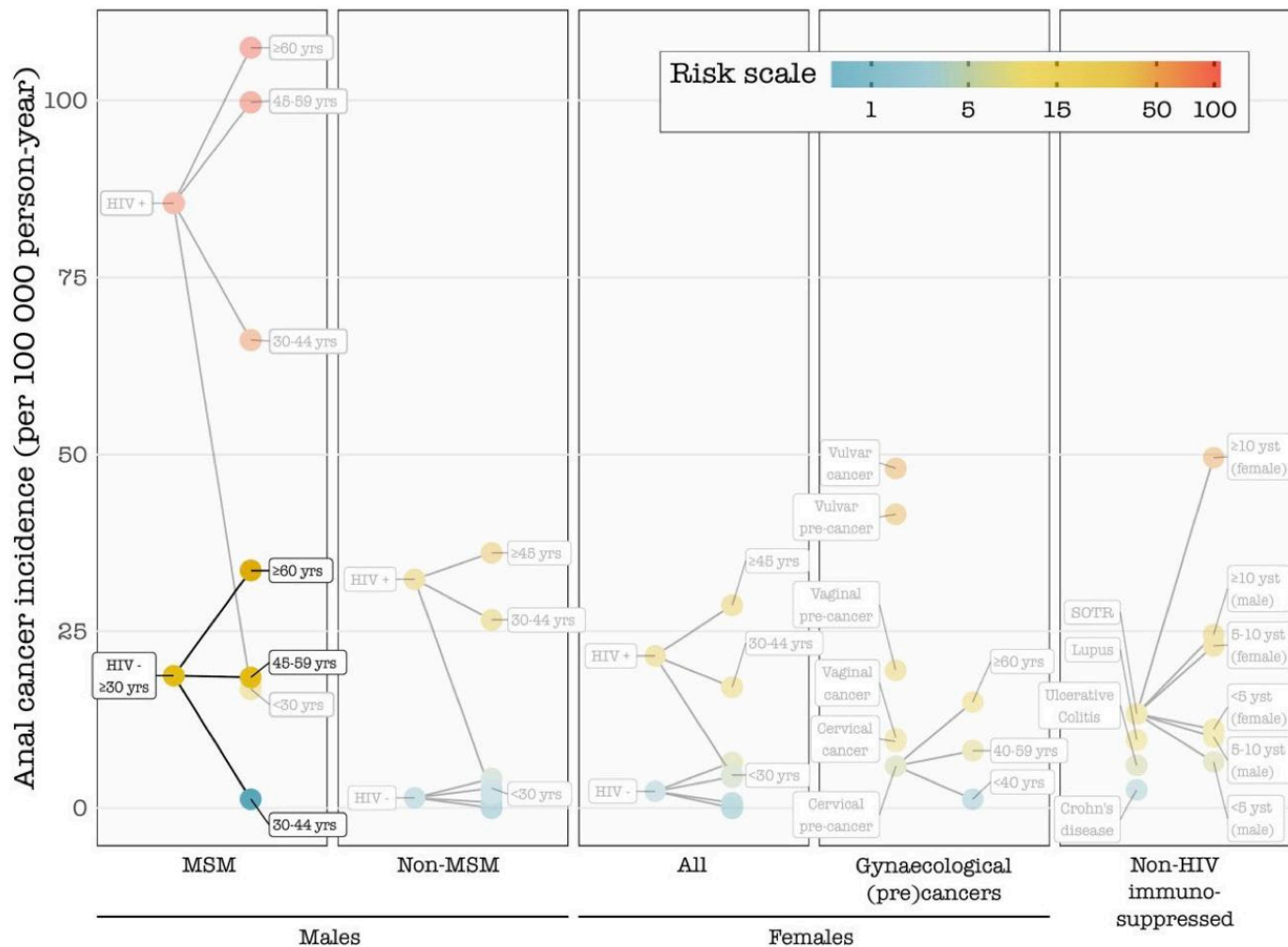
# Objectives

1. Groups at highest risk of anal cancer
2. Primary prevention of anal cancer
3. Secondary prevention of anal cancer

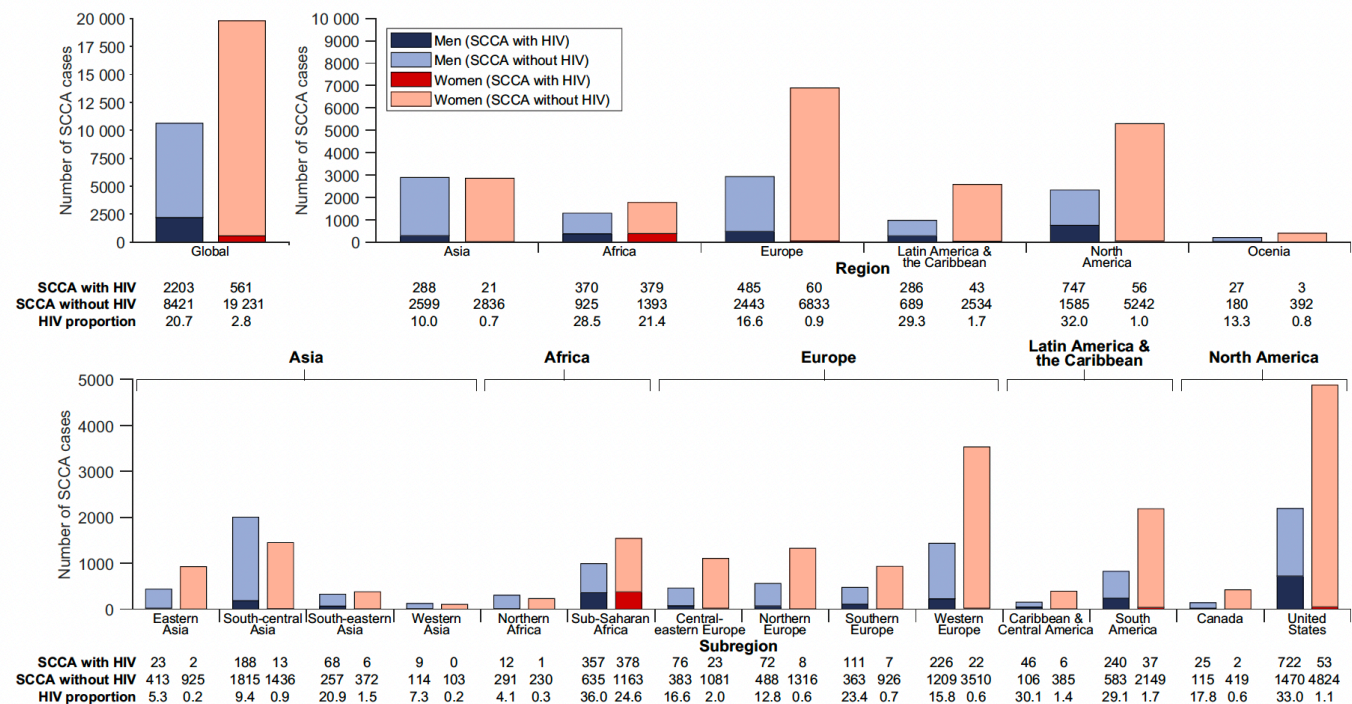
# Anal cancer risk scale



# Anal cancer risk scale



# Estimated proportions of new squamous cell carcinoma of the anus in persons living with HIV in 2020



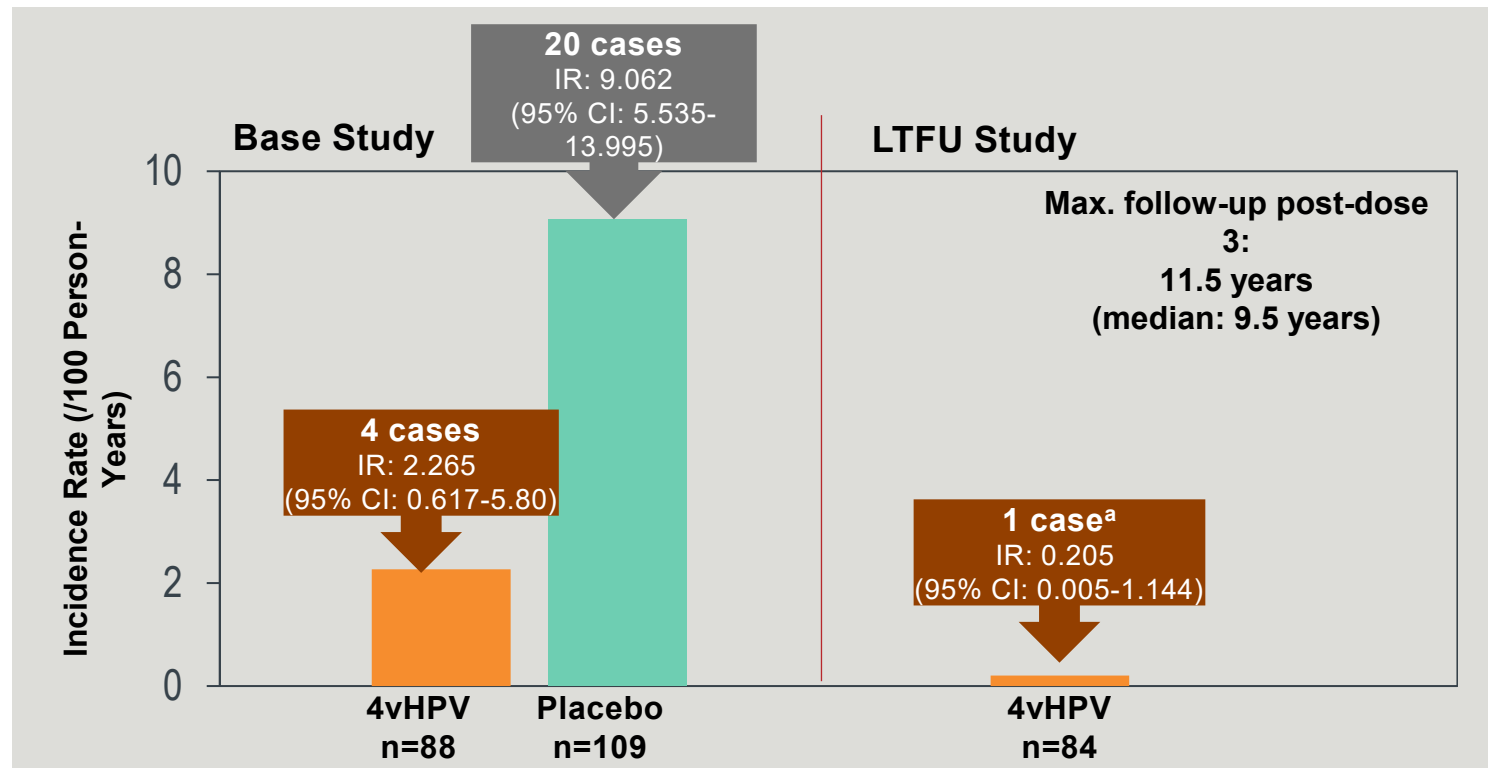
ORIGINAL ARTICLE

# HPV Vaccine against Anal HPV Infection and Anal Intraepithelial Neoplasia

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Dalya Guris, M.D., and Elizabeth I.O. Garner, M.D., M.P.H.

# Low Rates of HPV6/11/16/18-Related AIN and Anal Cancer in MSM

## 4vHPV Vaccine LTFU Study

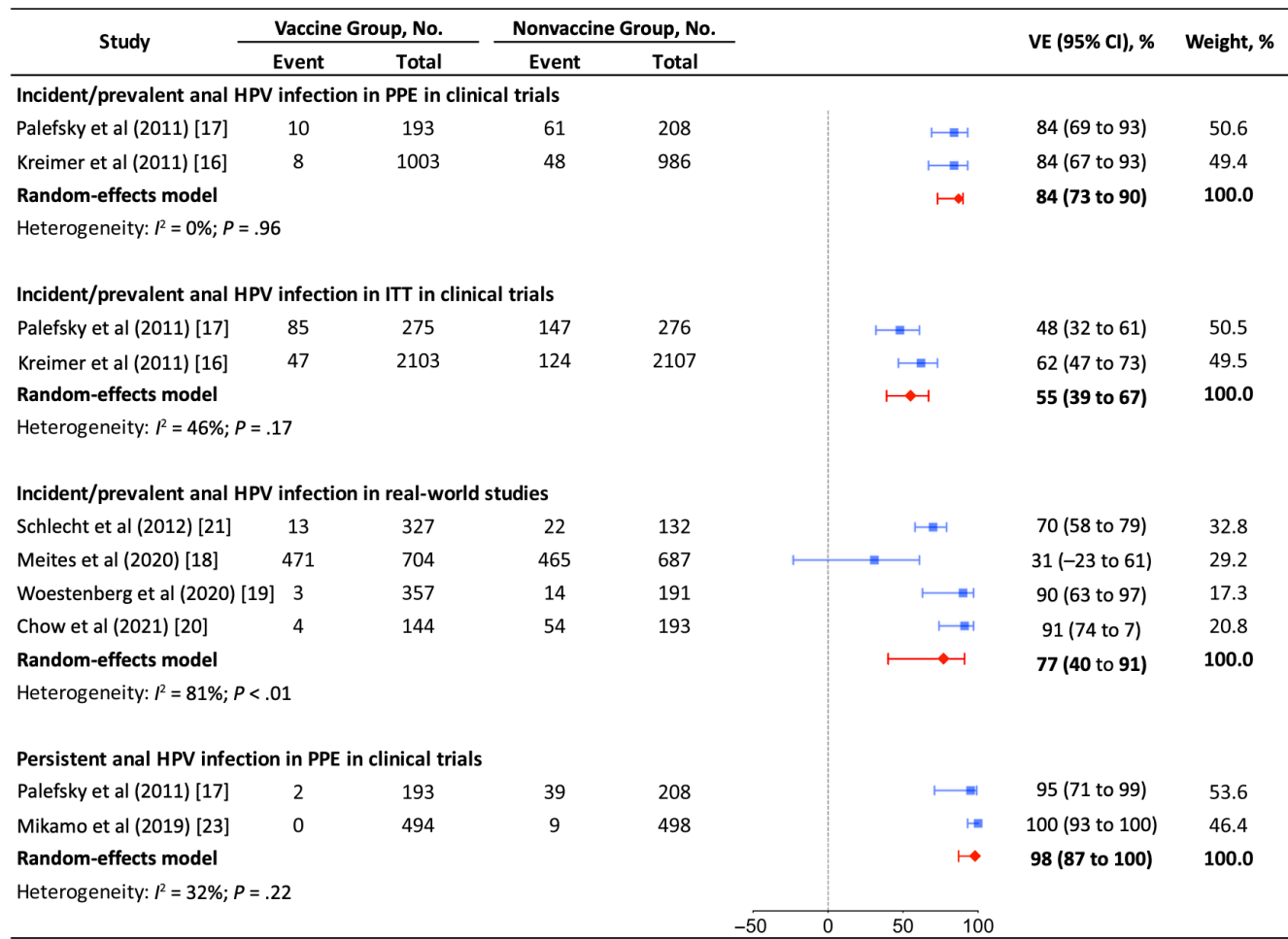


Per-protocol population (LTFU participants) Goldstone S, et al. *Lancet Infect Dis.* 2021; Published online

<sup>a</sup>HPV6-related AIN1 (HPV58 co-detected) November 12, 2021 [https://doi.org/10.1016/S1473-3099\(21\)00327-3](https://doi.org/10.1016/S1473-3099(21)00327-3)



# HPV vaccine to prevent anal HPV infection/disease



Foot:

# HPV vaccination among MSM Living with HIV 18-26 years AMC-072

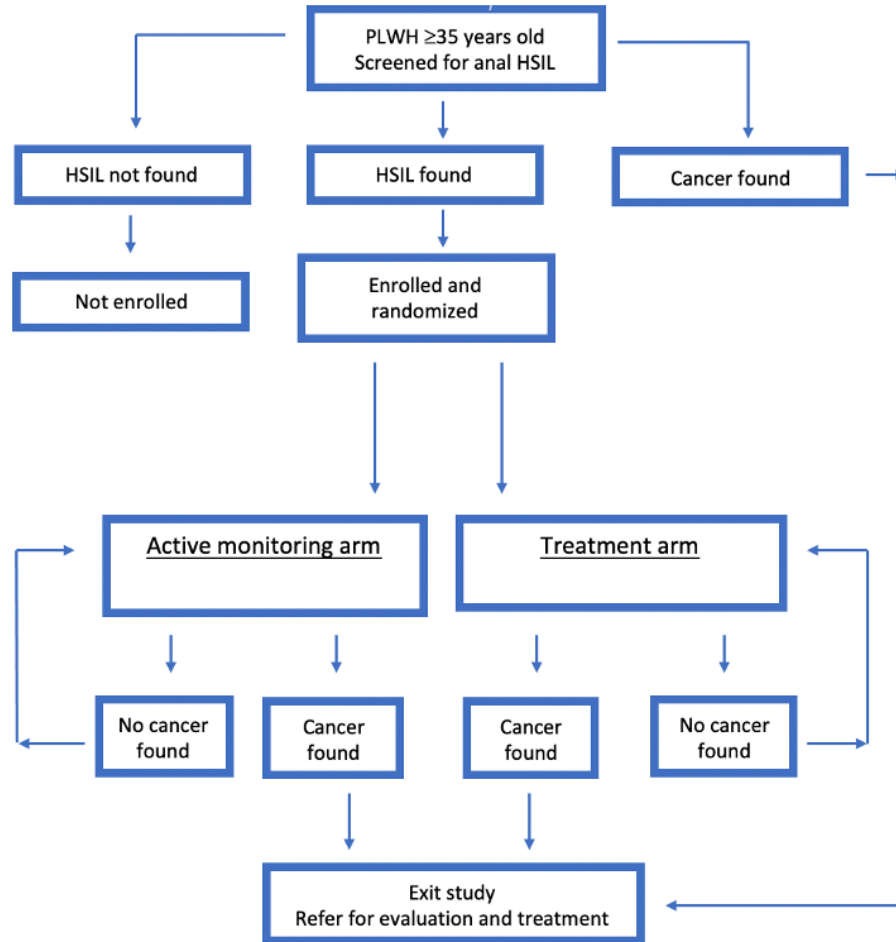
- 34% had HSIL at screening
- 67/43/47/34% of participants were previously exposed at baseline to HPV 6/11/16/18, respectively
- There were no cases of incident qHPV-associated anal HSIL among naïve men

ORIGINAL ARTICLE

# Treatment of Anal High-Grade Squamous Intraepithelial Lesions to Prevent Anal Cancer

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S.Y. Lensing, J. Logan, D.M. Aboulafia, J.T. Schouten, J. de la Ossa, R. Levine,  
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for the ANCHOR Investigators Group\*

# Study schema



## Anal HSIL and cancer at screening in the ANCHOR study

- 10,723 PLWH underwent screening
- 53.3% of men
- 47.2% of women
- 67.1% of transgender individuals
- 21 individuals (214/100,000) were diagnosed with anal cancer

# Results

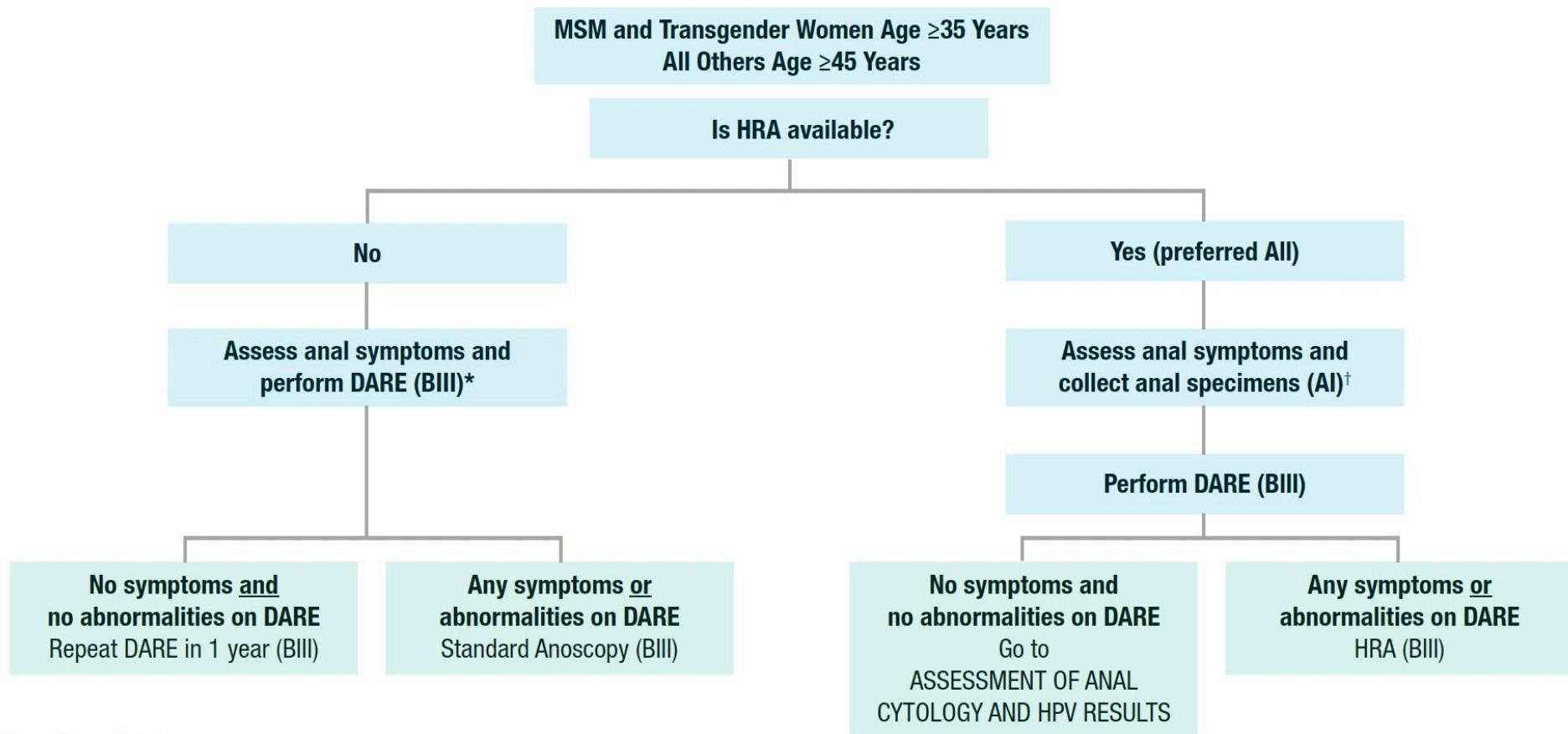
- Cancer incidence was 402/100,000 PY in the AM arm
- Cumulative progression to cancer was 1.8% in the monitoring arm
- Treatment of anal HSIL leads to 57% reduction in anal cancer (95% CI 6% to 80%, chi squared = 4.74, P=.029)
- Screening for and treatment of anal HSIL is now standard of care in PWH

# Treatments used in the ANCHOR Study

Over the course of the study: most participants had only one treatment modality (86%)= electrocautery (office-based hyfrecation)

Treatment was very well tolerated

# SCREENING ALGORITHM FOR ANAL CANCER IN ASYMPTOMATIC PEOPLE WITH HIV



\* No specimens collected

† Collect any specimens either for cytology or for cytology with HPV co-testing prior to DARE. HPV testing without cytology is not recommended (BIII)

**Key:** ASC-US = atypical squamous cells of undetermined significance; DARE = digital anorectal exam; HPV = human papillomavirus; hr-HPV = high-risk HPV; HRA = high-resolution anoscopy; MSM = men who have sex with men



# ASSESSMENT OF ANAL CYTOLOGY AND HPV RESULTS IN PEOPLE WITH HIV

Was hr-HPV co-testing performed?

No

**Cytology Normal**

Repeat cytology in 1 year (BIII)

**Normal x 3 consecutive years**

Repeat cytology in 1 year (BIII)

**Cytology  $\geq$  ASC-US**

HRA (BIII)

Yes

**Cytology Normal**

Assess hr-HPV results

hr-HPV Negative

Repeat cytology  
and hr-HPV in  
3 years (BIII)

hr-HPV Positive,  
No HPV typing

Repeat cytology  
and hr-HPV in  
6 months<sup>†</sup> (BIII)

hr-HPV Positive,  
HPV 16 and  
18 negative

Repeat cytology  
and hr-HPV in  
1 year<sup>†</sup> (BIII)

hr-HPV Positive,  
HPV 16 or  
18 positive

HRA (BIII)

**Cytology ASC-US**

Assess hr-HPV results

hr-HPV Negative

Repeat cytology  
and hr-HPV in  
1 year<sup>†</sup> (BIII)

hr-HPV Positive

HRA (BIII)

**Cytology  $\geq$  LSIL**

HRA (BIII)

<sup>†</sup> If at repeat testing either cytology is  $\geq$  ASC-US or any hr-HPV is detected, refer for HRA (BIII)

**Key:** ASC-US = atypical squamous cells of undetermined significance; DARE = digital anorectal exam; HPV = human papillomavirus; hr-HPV = high-risk HPV; HRA = high-resolution anoscopy; LSIL = low-grade squamous intraepithelial lesion

# International Anal Neoplasia Society screening guidelines

Population—Risk category	When	Anal cancer incidence <sup>2,5</sup> per 100,000 person-years
Risk Category A (incidence ≥ 10-fold compared to the general population)		
MSM and TW with HIV	Age 35	>70/100,000 age 30–44 >100/100,000 age 45+
Women with HIV	Age 45	>25/100,000 age 45+
MSW with HIV	Age 45	>40/100,000 age 45+
MSM and TW not with HIV	Age 45	>18/100,000 age 45–59 >34/100,000 age 60+
History of vulvar HSIL or cancer	Within 1 year of diagnosis	>40/100,000
Solid organ transplant recipient	10 years post-transplant	>25/100,000
Risk Category B (incidence up to 10-fold higher compared to the general population)		
Cervical/vaginal cancer	Shared decision age 45 <sup>a</sup>	9/100,000
Cervical/vaginal HSIL	Shared decision age 45 <sup>a</sup>	8/100,000
Perianal warts (male or female)	Shared decision age 45 <sup>a</sup>	Unknown
Persistent cervical HPV 16 (>1 year)	Shared decision age 45 <sup>a</sup>	Unknown
Other immunosuppression (e.g., Rheumatoid arthritis, Lupus, Crohn's, Ulcerative colitis, on systemic steroid therapy)	Shared decision age 45 <sup>a</sup>	6/100,000
Incidence among the general population: 1.7 per 100,000 <sup>8</sup>		

# Knowledge gaps of secondary prevention of anal cancer

- Optimal screening algorithms
- Markers of prevalent anal cancer
- Optimal follow-up algorithms
- Workforce shortage
- More efficient HRA and treatment training
- Biomarkers of disease progression and regression
- Better understanding of molecular pathogenesis of progression from HSIL to cancer
- Better (systemic, HPV-specific!) treatment

# ANCHOR Biorepository inventory as of July 30, 2024

Aliquot type	Storage temperature	Screening	Random-ization	Post-randomization up to 2/14/24	Post-randomization after 2/14/24	Total
		Visit 0	Visit 1-15	Visit 101-105	Visit 101-105	
Anal Swab 1 - Thinprep 2ml	-80°C	52,717	88,815	37106	1880	180518
Anal Swab 1 - Thinprep /Aptima	-80°C	17,745	31,041	12798	509	62093
Anal Swab 1- Thinprep Pre-Cytology 2 ml	4°C	-	-	0	590	590
Anal Swab 1- Thinprep 1 ml	-80°C	-	-	0	719	719
Anal Swab 1- Thinprep ~6 ml	4°C	-	-	155	217	372
Anal Swab 1 - SurePath - 2ml	4°C	1,919	3,200	1281		6399
Anal Swab 2 - Thinprep 2ml	-80°C	57,094	99,568	42550	3388	202600
Anal Swab 2 - Thinprep 1ml	-80°C			0	686	686
Anal Swab 2 - Thinprep 3ml	4°C	-	-	0	667	667
Anal Swab 2 - Thinprep 10 ml	4°C	11,452	19,993	8558	14	40017
Anal Swab 2 - Thinprep 6ml	4°C	-	-	0	669	669
Anal Swab 2 Thinprep 20 ml (original Thinprep Vial)	4°C	-	-	0	19	19
Anal Swab 3 - RNAProtect	-20°C	11,391	19,961	8805	701	40858
Serum 1ml	-80°C	33,115	58,102	14985	1289	107489
Plasma 1ml	-80°C	6	12,089	0		12095
Whole Blood Fractions 1 ml	-80°C	16	12,713	0		12729
Biopsies - RNALater	-20°C	Highlights and Notes	4,510	1273	116	5935
Oropharyngeal Swabs	-20°C	156	34	620		810
Paraffin Tissue Blocks (Cancer)		54	52	-	5	111
Total		185,701	350,078	128,131	11,469	675,379

# **Knowledge gaps that that will be addressed using the ANCHOR Biorepository**

1. Identification of screening tests and biomarkers of progression/regression to optimize screening and follow-up algorithms, stratified by HIV risk group
2. Understanding the molecular pathogenesis of progression from anal HSIL to cancer and spontaneous regression from HSIL to normal

Thank you!