**Role of Anal Pap Smears in the Prevention of Anal Cancer** Michael E Hagensee, MD PhD<sup>1</sup>, Amber J Trauth, MD<sup>1</sup>, and Jennifer E. Cameron, PhD<sup>2</sup>

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## **SIGNIFICANCE & OBJECTIVE**

- People living with HIV/AIDS (PLWH) have a 10-50-fold increase in developing anal cancer
- The ANCHOR trial demonstrated that treatment of highgrade anal lesions (AIN2/3) will prevent cancer in HIV+ individuals.
- The optimal way to initial screen PLWH for possible AIN2/3 is not known. Anal Pap smears are easy to obtain



RESULTS

and make a cytological diagnosis, but can they detect those with AIN2/3

• The goal of this study is to examine the predictive power of an anal Pap smear to detect concurrent AIN2/3.

## DEMOGRAPHICS

Charac	teristic	Overall (119)	
Gender	: Male	99 (83%)	
	Male identified as female	5 (4%)	
	Female	15 (13%)	
Race:	African-American	47 (39%)	
	Caucasian	71 (60%)	
	American Indian	1 (1%)	
Ethnicity: Hispanic		13 (11%)	
	Non-Hispanic	104 (89%)	
Age (mean, yrs)		51.6	
Range		23 - 75	
<40		24 (20%)	
40-60		67 (56%)	
>60		28 (24%)	
Pap Smear			
Unsatisfactory		11 (9%)	
Normal		22 (19%)	
ASCUS		39 (33%)	
LSIL		38 (32%)	
HSIL		9 (7%)	
Worst Biopsy			
Normal		21 (18%)	
Low Grade - AIN 1		48 (39%)	
High Grade - AIN 2		17 (14%)	
High Grade - AIN 3		30 (25%)	
High Grade – all		47 (39%)	
Colon		3 (2%)	

- Comparison of anal Pap smear to concurrent biopsy result. The 3 patients with normal Pap smears would have not triggered an anoscopy exam and that raises concern
- The 2 people with an HSIL anal Pap smear but a low-grade biopsy will lead to a subsequent anoscopy and biopsy to find the high-grade lesion

		Worst	Biopsy		
Pap Smear	Normal	AIN1	AIN2	AIN3	Colon
Normal	7 (32%)	11 (50%)	1 (4.5%)	2 (9%)	1 (4.5%)
ASCUS	6 (15%)	18 (46%)	7 (18%)	7 (18%)	1 (2.6%)
LSIL	6 (16%)	10 (26%)	4 (11%)	18 (47%)	0 (0%)
HSIL	0 (0%)	2 (22%)	5 (56%)	2 (22%)	0 (0%)
Unsatisfactory	2 (18%)	7 (64%)	0 (0%)	1 (9%)	1 (9%)

Population was mainly middle-aged Caucasian men

High-grade anal lesions were detected in 39%



- Pap smear strongly correlated with the worst biopsy (p=.001)
- Comparison of the concurrently obtained Pap smear and the worst biopsy results:
- 1 Three of 21 (14%) of those with a normal Pap smear had a high-grade lesions. This is concerning that the Pap smear may not be sensitive enough.
- 2 Two of 9 (22%) with HSIL anal Pap smear had a low-grade biopsy. This results in a future repeat anoscopy with additional biopsies taken

## CONCLUSIONS

- The anal pap smear correlated with the worst biopsy with a p-value < 0.01 which makes it an attractive possibility as an</li>
- PLWH who had undergone high resolution anoscopy and had both an anal Pap smear and at least 1 biopsy were determined by review of the electronic medical record at University Medical Center, New Orleans, LA, USA
- Demographic information including sex, race, age were obtained
- Anal Pap smear results were compared to the worst histological biopsy
  obtained at the same visit
- Statistical analysis was performed using SPSS V 15.0 software

This study was approved by the LSUHSC Institutional Review Board prior to its initiation. Study supported in part by NIH R01-R01CA121979.

The authors have no conflicts of interest to disclose.

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## initial screen

- A normal anal Pap smear missed 14% of those with a highgrade biopsy is of concern
- Future studies will examine the use of the Anal Pap smear at yearly intervals as a triage tool.
- In addition, other biomarkers such as HPV DNA testing or the presence of EBV viral DNA elements will be tested as possible triage markers.