

# Associations between anorectal chlamydia and oro-anal sex or saliva use as a lubricant for anal sex: A cross-sectional survey.

Vincent Cornelisse, Christopher Fairley, Tim Read, David Lee, Sandra Walker, Jane Hocking, Marcus Chen, Catriona Bradshaw, Eric Chow.



## Background

The oropharynx may play a role in the transmission of chlamydia:

- Health in Men (HIM) study (Jin et al, 2007):
  - Insertive oro-penile sex is a risk factor for urethral chlamydia (aHR 1.54, 95% CI 1.13 to 2.11).
  - Receptive oro-anal sex is a risk factor for anorectal chlamydia (aHR 2.53, 95% CI 1.35 to 4.76).
  - 36% of diagnoses of anorectal chlamydia occurred in men who report no condomless peno-anal sex in the last 6 months.
- Barbee et al, 2016:
  - 31.4% of MSM with chlamydia urethritis report only exposure as insertive oro-penile sex.
  - However, the population attributable risk percent (PAR%) of chlamydia urethritis attributable to oropharyngeal exposure is only 2.7%.



## Hypothesis

- That chlamydia can be transmitted to the ano-rectum when saliva is used as a lubricant during anal sex practices, as we have previously shown for anorectal gonorrhoea (Chow EP, Cornelisse VJ, Read TR, et al. *Sex Transm Infect* 2016).



## Methods

- Data collected between 31<sup>st</sup> July 2014 to 30 June 2015.
- MSHC patients routinely asked to complete a computer-assisted self-interview (CASI), that asks questions on demographics and sexual practices.
- We added additional questions to CASI to ask about:
  1. Receptive rimming,
  2. Receptive fingering or penis “dipping”
  3. The use of a partner’s saliva as an anal lubricant

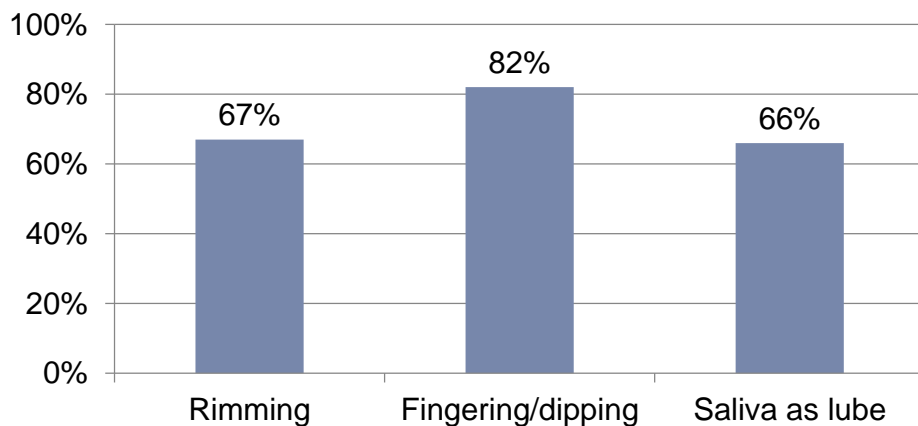


## Participants

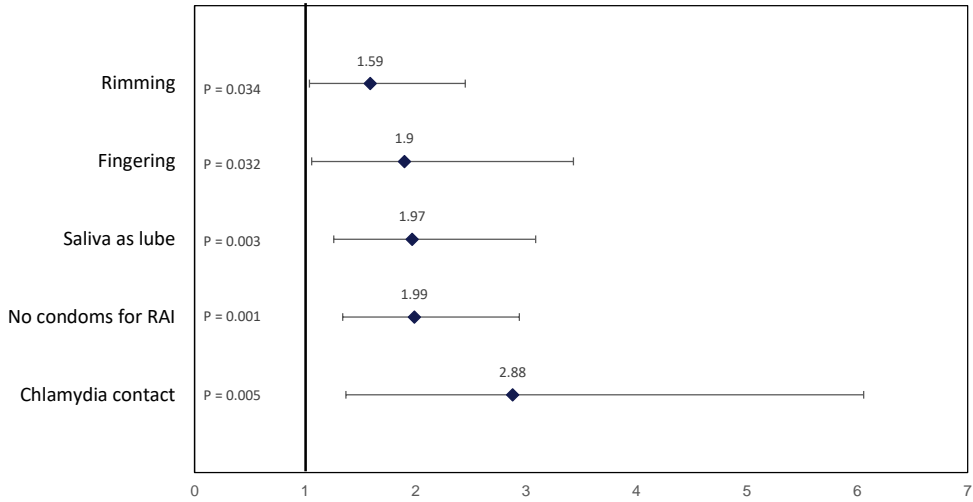
- 6406 MSM were invited to participate, and 2599 (41%) completed the questionnaire.
- Of these, 908 (35%) were excluded, 759 because they were not tested for anorectal chlamydia, and 149 because they were repeat presentations by participants who had already completed the questionnaire.
- 1691 MSM were included in the final analysis.
- Included participants had a median age of 29 years (IQR 25 to 37)
- 120 participants (7.1%) tested positive for anorectal chlamydia.



## Frequency of sexual practices



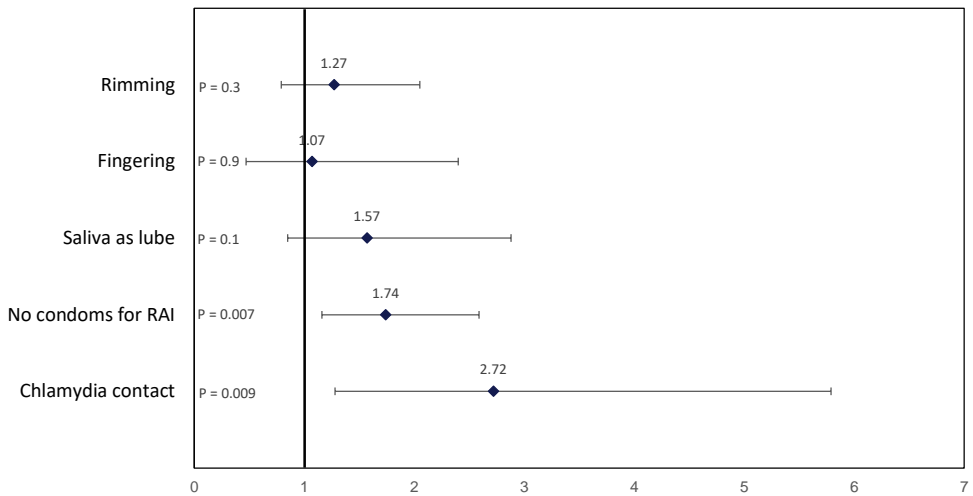
## Univariate associations with anorectal chlamydia



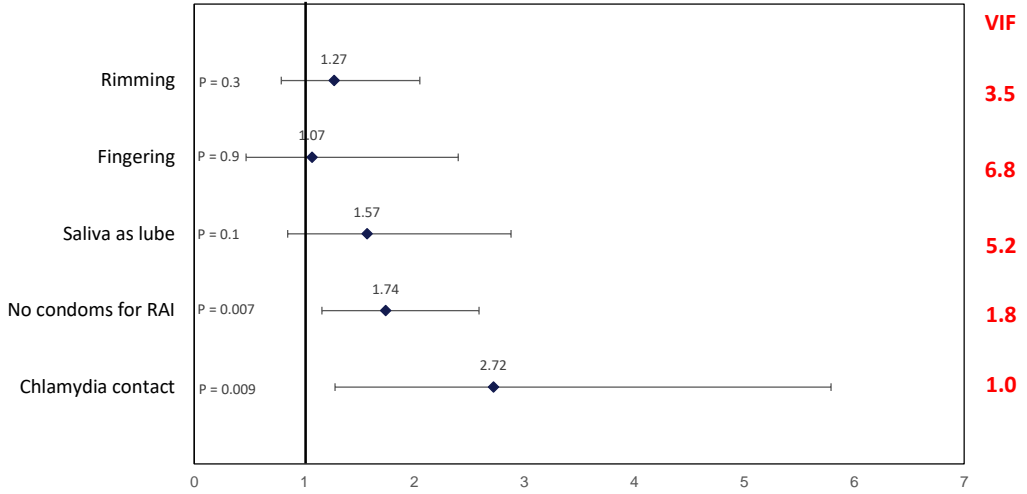
Age, number of partners and HIV status not significantly associated.



## Multivariate associations with anorectal chlamydia



## Multivariate associations with anorectal chlamydia



## Cross-tabulation of sexual practices

	Condom use for receptive anal sex			Rimming		Fingering	
	Always	Not always	No response	No	Yes	No	Yes
<b>Rimming</b>							
No	340	190	28				
Yes	550	547	36				
% yes	62%	74%	56%				
(95% CI)	(58.5-65.0)	(70.9-77.3)	(43.3-68.6)				
<b>Fingering</b>							
No	208	77	23	226	332		
Yes	682	660	41	82	1133		
% yes	77%	90%	64%	27%	77%		
(95% CI)	(73.7-79.4)	(87.1-91.7)	(51.1-75.7)	(21.8-31.9)	(75.1-79.5)		
<b>Saliva use</b>							
No	364	163	25	339	213	279	273
Yes	526	574	39	219	920	29	1110
% yes	59%	78%	61%	39%	81%	9%	80%
(95% CI)	(55.8-62.4)	(74.5-80.8)	(47.9-72.9)	(35.2-43.4)	(78.8-83.4)	(6.4-13.2)	(78.1-82.3)



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## Anorectal chlamydia and rimming

	Adjusted OR	(95% CI)	P value
<b>Receptive rimming</b>			
Yes	<b>1.52</b>	<b>(0.98 to 2.36)</b>	<b>0.060</b>
No	1		Ref
<b>Condom use for receptive anal intercourse (RAI)</b>			
Not always	1.85	(1.25 to 2.75)	0.002
Always/no RAI	1		Ref
No response	2.46	(1.06 to 5.73)	0.036
<b>Known contact of chlamydia</b>			
Yes	2.78	(1.31 to 5.89)	0.008
No	1		Ref



## Anorectal chlamydia and fingering/dipping

	Adjusted OR	(95% CI)	P value
<b>Receptive fingering or penis dipping</b>			
<b>Yes</b>	<b>1.75</b>	<b>(0.96 to 3.20)</b>	<b>0.068</b>
<b>No</b>	1		Ref
<b>Condom use for receptive anal intercourse (RAI)</b>			
<b>Not always</b>	1.82	(1.22 to 2.71)	0.003
<b>Always/no RAI</b>	1		Ref
<b>No response</b>	2.57	(1.10 to 5.99)	0.029
<b>Known contact of chlamydia</b>			
<b>Yes</b>	2.70	(1.27 to 5.73)	0.01
<b>No</b>	1		Ref



## Anorectal chlamydia and saliva use as lubricant

	Adjusted OR	(95% CI)	P value
<b>Use of partner's saliva as lubricant</b>			
<b>Yes</b>	<b>1.77</b>	<b>(1.12 to 2.79)</b>	<b>0.014</b>
<b>No</b>	1		Ref
<b>Condom use for receptive anal intercourse (RAI)</b>			
<b>Not always</b>	1.76	(1.18 to 2.62)	0.006
<b>Always/no RAI</b>	1		Ref
<b>No response</b>	2.40	(1.03 to 5.60)	0.042
<b>Known contact of chlamydia</b>			
<b>Yes</b>	2.65	(1.25 to 5.64)	0.011
<b>No</b>	1		Ref





## Conclusions

- Using a partner's saliva as anal lubricant may be a weak risk factor for anorectal chlamydia.
- In comparison, we have previously reported that the use of a partner's saliva as anal lubricant is strongly associated with anorectal gonorrhoea (Chow EP, Cornelisse VJ, Read TR, et al. *Sex Transm Infect* 2016).
- This fits with published observations that chlamydia is uncommonly found in the oropharynx of MSM, whereas gonorrhoea is more commonly found in the oropharynx.



## Acknowledgements

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