Impact of the LNG-IUS on cervical persistence of *Chlamydia trachomatis* and vaginal microbiota in a baboon model

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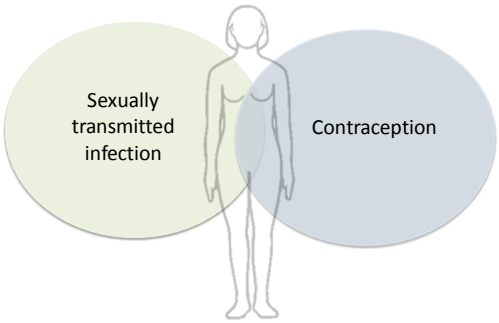
Disclosures

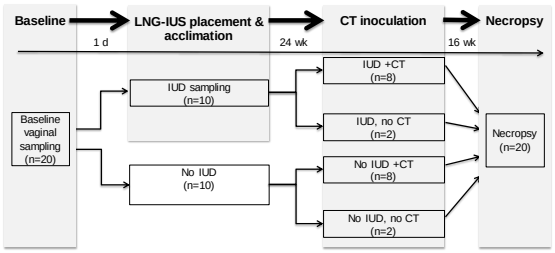
I have no financial or industry disclosures



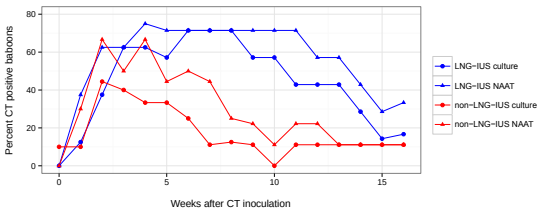
Background

- CT is the most common bacterial STI worldwide (~2 million cases annually in the US)
- Use of long-acting reversible contraception (particularly IUDs) is increasing among women in the US and worldwide
- Despite the increase in LARC use among women the IUD continues to suffer from historical misconceptions
- Using our established model of CT infection in the baboon makes studying this association prospectively possible

Study Design



LNG-IUS is associated with prolonged endocervical CT infection



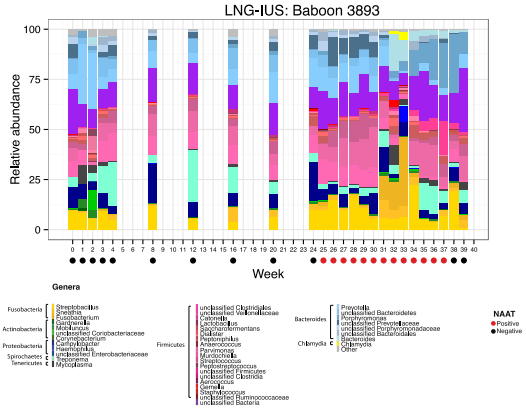
Group	LNG-IUS	No LNG-IUS	P
NAAT post-inoculation CT clearance (weeks)	10 (7-12)	3 (0-12)	0.06
Culture post-inoculation CT clearance (weeks)	9 (3-12)	1.5 (0-10)	**0.04**

Why is the LNG-IUS associated with prolonged CT infection?

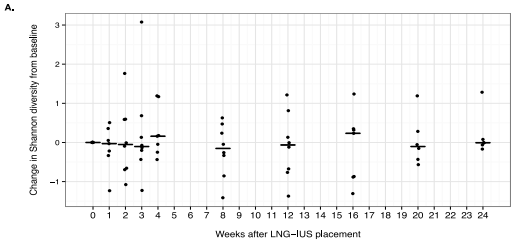
- Alterations in…
  - – Vaginal commensal bacteria that contribute to host immunity

Study Question

Does the vaginal microbiome impact *Chlamydia trachomatis* in a baboon model?

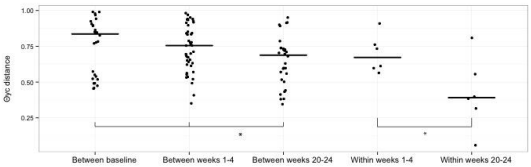


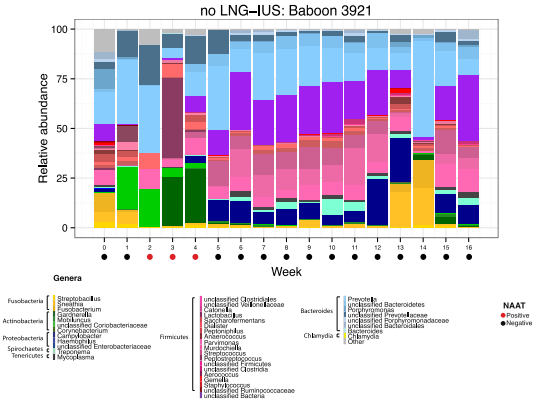
LNG-IUS does not alter vaginal microbial diversity



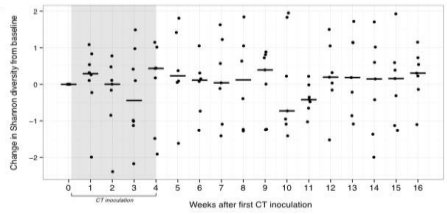
	Shannon diversity index (median)	Observed OTUs
Baseline (pre-IUD)	3.04	54
Post-IUD	2.91	58

LNG-IUS associated with stabilization of vaginal microbial communities



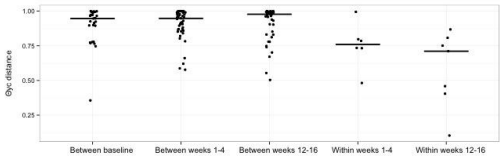


CT infection does not persistently alter vaginal microbial diversity

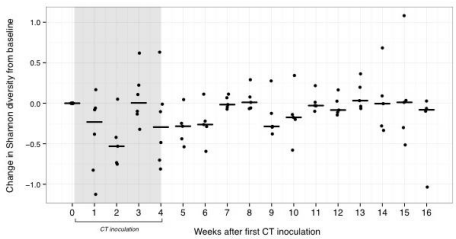


	Shannon diversity index (median)	Observed OTUs
Baseline (pre-CT)	2.64	49
Post-CT	2.55	54

CT does not alter community stability

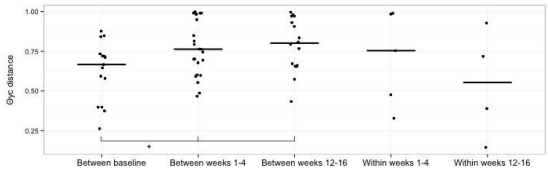


CT in presence of LNG-IUS



	Shannon diversity index (median)	Observed OTUs
Baseline (IUD+/CT-)	3.02	61.5
Post-CT and IUD	2.88	52

CT in presence of LNG-IUS



Conclusion

- Low rate of PID in both groups
- Lower tract clearance of CT was delayed in the IUD group as compared to no-IUD group
- LNG-IUS is associated with prolonged endocervical CT infection but altered colonization dynamics are not explained by changes in vaginal microbiota.

Conclusion

- Why is the LNG-IUS associated with prolonged CT infection?
- Alterations in…
  - Humoral or cell-mediated immunological responses due to exogenous progestin
  - Cervical mucous volume, thickness, or glycosylation
  - Vaginal commensal bacteria that contribute to host immunity

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