

11 isolates. The 189 *N. gonorrhoeae* isolates were assigned to 112 different NG-MASTs; seven sequence types (STs) were novel. The most common ST was 10,668 (16.1%), followed by ST15024 (7.1%). Two ST1407 strains were isolated in 2015. Although ST1407 was known to display decreased susceptibility to ESCs or full resistance, they were susceptible for CRO (MIC = 0.06 µg/mL) and cefixime (MIC = 0.12 µg/mL).

Conclusion. The recent emergence of ESC-resistant *N. gonorrhoeae* strains which was often associated with mutations in the *penA* gene is a major concern and enhanced AMR surveillance is necessary to prevent transmission of these strains.

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1490. Lymphogranuloma Venereum: Correct Diagnosis Makes All the Differences

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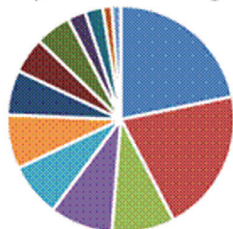
Background. Lymphogranuloma venereum (LGV) is a sexually transmitted infection that is rare in United States. There is no FDA approved test to differentiate *Chlamydia trachomatis* (CT) infections caused by LGV serovars making diagnosis challenging. This study characterizes the difficulties of diagnosing LGV during an outbreak in Southeast Michigan.

Methods. We performed a retrospective chart review of patients who met CDC criteria for confirmed and probable LGV at one of the Wayne State University ID Clinics between August 2015 and March 2018. Presenting symptoms, initial diagnoses, diagnostic testing, interval between onset of symptoms and LGV diagnosis, and treatment were reviewed. IRB exemption was obtained.

Results. Of 39 patients with LGV, eight (20%) were probable cases and 31 (80%) were PCR confirmed at CDC. All patients were men having sex with men (MSM) and 38 were HIV infected. In 22 patients (56%), LGV was considered likely at presentation whereas in 17 (44%) patients LGV was not initially considered. 11 (66%) patients with a delayed diagnosis had 14 unnecessary diagnostic tests ordered, including computed tomography (6), colonoscopy (7) and renogram (1); only 3 (14%) with a correct early diagnosis had such tests ($P \leq 0.001$). Fifteen (88%) of those with a delayed diagnosis received inappropriate treatment compared with none of those with an initial LGV diagnosis ($P \leq 0.0001$). Correct treatment occurred 43 days after presentation in those with a delayed diagnosis, whereas the early diagnosis patients were treated on the day of presentation ($P \leq 0.0001$). All 39 patients eventually received 21 days of doxycycline and experienced resolution of symptoms.

Conclusion. LGV is rare in the United States, its clinical presentation in MSM is not well known, and proof requires unlicensed tests. More education is needed so that clinicians consider the diagnosis in MSM with a typical syndrome, start treatment promptly and avoid unnecessary tests.

Frequency of Presenting Symptoms



- Proctitis (42.5%)
- Abdominal Pain (17.5%)
- Hematochezia (15%)
- Rectal Discharge (12.5%)
- Tenesmus (10%)
- Tiredness (5%)
- Rectal Ulcer (2.5%)
- Constipation (40%)
- Penile Ulcer (17.5%)
- Rectal Bleeding (15%)
- Inguinal Lymphadenopathy (10%)
- Asymptomatic (5%)
- Anal Wart (2.5%)

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1491. Mycoplasma genitalium: A Concordance Study in Heterosexual Partnerships at Risk for Chlamydial Infection

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Background. *Mycoplasma genitalium* (MG) causes symptomatic nonchlamydial, nongonococcal urethritis in men, and cervicitis, pelvic inflammatory disease and

infertility in women. We aimed to determine: prevalence and concordance of MG infection within heterosexual partnerships; MG detection by sample site in infected subjects; symptom association with MG infection; frequency of co-infection with *Chlamydia trachomatis* (CT), *Neisseria gonorrhoeae* (NG) and *Trichomonas vaginalis* (TV); and risk factors associated with MG infection and concordance.

Methods. Data from two partnership studies were combined; both enrolled sexually active heterosexual couples between the ages of 14–24 years who were at high risk for CT, between April 10, 2000 and September 29, 2003 at a sexually transmitted infection (STI) clinic in Indianapolis, IN. MG was detected by nucleic acid amplification from specimens stored at -70°C for up to 48 months. MG was sought in urine and urethra in men and urine, vagina, and cervix in women. Symptoms evaluated were dysuria, discharge in men and discharge, dysuria, abdominal pain in women. Symptom association with MG infection was analyzed by Chi-square test and logistic regression was used for associations of demographic, behavioral and biologic factors with MG concordance.

Results. Microbiologic data were available from 200 men and 217 women, and demographic information from 188 men and 201 women in partnerships. 43/217 dyads contained an individual with MG infection, and both individuals were infected in 11/43 (26%) partnerships (concordant). In men and women MG detection was highest in urine (10%, 9%) specimens. Prevalence of MG was 14% in women and 10% in men. Most infected men (79%) and women (62%) were African American. Mean age at first sex was 14 years for both genders. CT was the most frequent co-infection in both MG infected men (32%) and women (52%). MG infection without co-infection was associated with penile discharge in men (57%) $P = 0.18$. No symptoms in women were indicative of MG infection, and no demographic, behavioral or biologic factors were statistically associated with MG concordance.

Conclusion. The prevalence of MG was substantial. Concordance in partnerships was 26%, less than observed with CT (~70%) in this study. Our study is limited due to small numbers of subjects with MG infection.

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1492. Chlamydia, Gonorrhea, Syphilis and HIV Screening among Men Presenting with STI-Related Complaints at a Community-Based Emergency Department in Columbus, Ohio: A 5-Year Retrospective Study

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Background. Sexually transmitted infections (STIs) disproportionately affect individuals living in poor and underserved areas of the United States. Emergency Departments (ED) are often the only point of healthcare access for these at-risk individuals. As such, the ED often serves a key role in STI screening. The purpose of this study was to review STI screening practices for men at an urban and community-based ED affiliated with a large academic medical center in Columbus, Ohio.

Methods. Retrospective review of all ED visits from January 2012 to December 2017. A total of 279,929 patient-visits were analyzed for male patients by (1) exposure to an STI (2) STI-related symptoms (penile discharge/pain, scrotal/testicular pain/swelling). We analyzed the demographic characteristics of men who presented to the ED with an STI-related complaint and compared those who underwent STI screening (chlamydia, gonorrhea, syphilis or HIV) to those that did not.

Results.

Table 1.

Men with STI-Related Chief Complaints (n = 3,281)	Any STI Testing Done 2,274 (69.4%)	No STI Testing Done 1,003 (30.6%)
Race		
Black	2,112 (92.8%)	809 (80.6%)
White	109 (4.7%)	138 (13.7%)
Other	53 (2.3%)	56 (5.5%)
Median age (IQR)	30 (23–44)	27 (23–36)
Presenting Complaint		
Males exposed to STI 1,459 (14.9%)	1,120 (76.8%)	339 (23.2%)
Males with symptoms 1,809 (20.9%)	1,154 (63.8%)	655 (36.2%)

Conclusion. Over a 5-year period, screening for chlamydia, gonorrhea for men presenting with STI-related complaints was adequate. However, syphilis and HIV screening was very low among men presenting to an urban and community-based ED with an STI-related complaint. A separate analysis for women is being done. There is an urgent need to identify and eliminate barriers to syphilis and HIV screening in EDs that serve at-risk populations.

Testing Done (n = 2,274)

Chlamydia	2,269 (99.7%)
Gonorrhoea	2,267(99.6%)
Syphilis	33 (1.4%)
HIV	1 (<0.1%)

Disclosures. All authors: No reported disclosures.

1493. Effect of HIV Status on Early Syphilis Treatment Response in the Era of Combination Antiretroviral Therapy

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Background. Rates of incident early syphilis are increasing and HIV-coinfection is common. Syphilis treatment for HIV-positive individuals does not differ from that of the general population, although data published prior to combination antiretroviral therapy (cART) suggest that HIV-infected persons may be less likely to achieve expected serologic responses to treatment (SRT).

Methods. We conducted a cohort study of early syphilis diagnosed in a large HIV clinic and a public sexually transmitted diseases (STD) clinic in San Diego. SRT was defined as a fourfold or greater decline in rapid plasma reagin (RPR) titer following syphilis treatment. We compared SRT at 6 and 12 months post-treatment between HIV-infected and HIV-uninfected persons.

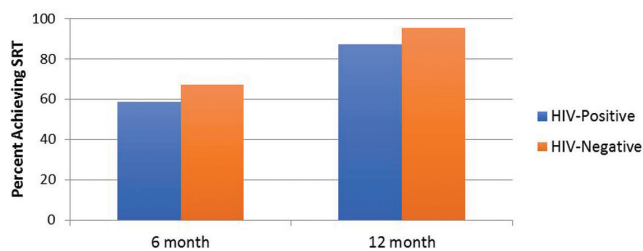
Results. Of 1,239 early syphilis cases reviewed, 742 (61%) were included in the analysis. Reasons for exclusion included lack of follow-up RPR (n = 454), nonreactive RPR at syphilis diagnosis (n = 33), and incomplete data (n = 10). Of those analyzed, 533 (72%) were HIV-positive; 168 (23%) HIV-negative; HIV status was unknown for 41 (5%). Overall, 449 (60%) and 657 (89%) of analyzed cases achieved SRT 6 and 12 months after treatment, respectively. HIV-positive cases were less likely to achieve SRT at 12 months than HIV-negative cases (464/533 [87%] vs. 160/168 [95%], P = 0.003, Figure 1), as were early latent syphilis cases (285/348 [82%]) vs. primary (102/117 [92%]) and secondary syphilis (264/277 [94%]) (Table 1).

Conclusion. In this cohort of early syphilis cases, most achieved SRT within 12 months of treatment, but only 60% achieved SRT within 6 months. Significantly lower 12-month SRT responses were seen in HIV-positive compared with HIV-negative persons and in early latent compared with primary and secondary syphilis. The impact of cART use, viral suppression, and treatment choice on outcomes is being analyzed.

Table 1. Serologic Response to Treatment by Syphilis Clinical Stage

RPR Titer Response	Syphilis Stage			P-Value
	Primary N = 117	Secondary N = 277	Early Latent N = 348	
6 months post-treatment				
≥4-fold decline	70 (60%)	177 (64%)	202 (58%)	0.323
<4-fold decline	47 (40%)	100 (36%)	146 (42%)	
12 months post-treatment				
≥4-fold decline	108 (92%)	264 (95%)	285 (82%)	<0.001
<4-fold decline	9 (8%)	13 (5%)	63 (18%)	

Serologic Response to Syphilis Treatment (SRT) by HIV Status



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1494. Vaginal pH: Associations with *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, and *Trichomonas vaginalis*

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Background. Bacterial vaginosis (BV), a low-*Lactobacillus* state characterized by elevated vaginal pH, has been associated with incident sexually transmitted infections (STIs). Elevated pH may also be associated with certain *Lactobacillus* species (*L. iners*). Increased pH may serve as a cheap, easily accessible biomarker for underlying STI, vaginal dysbiosis and risk of STI acquisition. In this study we examine the relationship between vaginal pH and infection with *Neisseria gonorrhoeae* (GC), *Chlamydia trachomatis* (CT) and *Trichomonas vaginalis* (TV).

Methods. This study used data from women attending Baltimore City STI clinics from 2005 to 2016. Those with a vaginal pH determination and testing for GC, CT or TV were included. Most GC and CT testing was conducted using nucleic acid amplification tests, while TV was diagnosed via microscopy. Generalized estimating equations with a logit link were utilized to explore relationships between vaginal pH and STI, accounting for confounders and repeated within patient measures.

Results. A total of 28,333 individual women contributed 63,032 visits. Mean age was 28.9 (SD 9.8), 4.5% were Caucasian and 91.5% were Black. 42.5% had BV via Amsel's criteria. Of 11,577 total STI cases 2056 (17.8%) had a pH <4.5. 22.2% of GC cases, 28.2% of CT cases, and 7.4% of TV cases had a pH <4.5. After adjustment for age, race, number of sexual partners in the past 6 months, and HIV sero-status, a pH ≥4.5 was associated an increased odds of GC (OR: 1.86 (CI 1.66–2.09)), CT (OR: 1.44 (CI 1.34–1.53)), and TV (OR: 6.50 (CI 5.98–7.16)) infection as compared with a pH of <4.5. These relationships remained significant in subjects without symptomatic BV and when each analysis was restricted, separately, to those who reported exposure to a partner with GC, CT or nongonococcal urethritis, or TV.

Conclusion. Elevated vaginal pH is associated with urogenital STI and may serve as a useful biomarker for underlying infection. This analysis was not able to assess causality, though pH remained predictive when restricted to those reporting STI exposure, perhaps suggesting that high pH increases risk of STI acquisition. Further prospective studies are required to confirm these findings and to mechanistically define relationships between vaginal pH, resident microbiota, and STI.

Disclosures. All authors: No reported disclosures.

1495. Incidence of Sexually Transmitted Infections (STIs) in Patients on Pre-exposure Prophylaxis (PrEP)

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Background. Pre-exposure prophylaxis (PrEP) is a highly effective method for preventing HIV transmission among at-risk patients. There is limited and conflicting data regarding the risk of other STIs following PrEP initiation. The objective of this study was to compare the incidence of STIs before and during PrEP therapy.

Methods. A retrospective observational study of patients seeking PrEP therapy at an inner-city clinic in Newark, New Jersey, between May 1, 2016 and March 30, 2018. Patients who were MSM, intravenous drug users, or heterosexual with multiple or HIV-positive partners were considered at risk for HIV and offered PrEP. Patients were initially screened and tested every 3 months for HIV, *Chlamydia trachomatis*, *Neisseria gonorrhoea*, syphilis, hepatitis B virus (HBV), hepatitis C virus (HCV), hepatitis A virus (HAV), herpes simplex virus (HSV), medication adherence and continued high-risk behavior. Patients were also counseled on risk-reduction behaviors. STI incidence before and during PrEP was compared.

Results. Between May 1, 2016 to March 30, 2018, 125 patients were considered at risk. Fifty-one (41%) patients were lost to follow-up after the initial visit and were excluded. Seventy-four (59%) patients completed screening and were included in the study. The mean age was 35.0 ± 11.6 years. The majority of the patients were males 74% (54). 29 (40%) were MSM, and 33 (45%) had HIV-positive partners. The mean duration of PrEP was 386 ± 183 days. Upon initial screening 14 (19%) patients were positive for at least one STI; 3 (21%) patients had HCV, 3 (21%) had *chlamydia*, 2 (14.3%) had HBV, 2 (14.3%) had *gonorrhoea*, 2(14.3%) had syphilis, one had HSV II and one was found to have HIV. Two patients acquired a new STI on PrEP. One tested positive for chlamydia and gonorrhoea 1 month after initiating prep and another contracted syphilis after 6 months. No patient had recurrent STIs nor acquired HIV while on PrEP therapy.

Conclusion. The use of PrEP not only reduces the transmission of HIV but also appears to reduce the incidence of other STIs. Frequent STI screenings and behavioral counseling on risk reduction likely contributed toward lower STI incidence. Larger studies examining similar data over longer durations are needed to confirm these findings.

Disclosures. All authors: No reported disclosures.

1496. Anorectal *Mycoplasma genitalium* Is Common Among Nigerian MSM and Associated with HIV

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