Conclusion The overwhelming etiology of urethritis among HIV-infected men in Malawi is *Neisseria gonorrhoeae*. Current syndromic management guidelines that treat gonorrhea, chlamydia and trichomonas seem adequate for treatment of UD but future guidelines must be informed by ongoing monitoring of antibiotic resistance.
Disclosure No significant relationships.

P793 RISK FACTORS FOR INCIDENT NON-GONOCOCCAL URETHRITIS (NGU) IN MEN WHO HAVE SEX WITH WOMEN (MSW) ATTENDING AN STD CLINIC

[1]Emily Rowlinson*, [1]Laura Chambers, [2]Sylvan Lowens, [2]Jennifer Morgan, [1]Tashina Robinson, [1]Sarah Romano, [1]Gina Leipertz, [3]Matthew Golden, [4]James Hughes, [5]Lisa Manhart. *[1]University of Washington, Epidemiology, Seattle, USA; [2]Public Health – Seattle and King County, Seattle, USA; [3]University of Washington, Medicine, Seattle, USA; [4]University of Washington, Biostatistics, Seattle, USA; [5]University of Washington, Epidemiology, Global Health, Seattle, USA*

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Background Incidence and risk factors for NGU remain poorly defined. We conducted a cohort study to estimate incidence and identify associated risk factors in MSW.
Methods We enrolled cisgender male STD clinic patients age ≥16, who reported exclusively female partners. At enrollment and six monthly follow-up visits, men underwent a clinical exam, provided urethral swab and urine specimens, and completed a sexual behavior survey. We tested for chlamydia (CT) and *Mycoplasma genitalium* (MG) using Aptima. NGU was defined as urethral symptoms or visible discharge plus ≥5 polymorphonuclear leukocytes per high-power field on a Gram-stained slide. NGU following an NGU-negative visit was considered incident. We estimated incidence of NGU overall, pathogen-associated (MG or CT) and idiopathic NGU using Poisson regression for clustered outcomes. We performed relative risk binomial regression for clustered data to identify characteristics associated with incident NGU.
Results From 08/2014-08/2018, 254 participants had ≥1 follow-up visit, contributing 100.6 person-years at risk during follow-up. Median age was 32 (range=17–71), 53% were white and 24% black. Eighty-four (33%) had NGU at enrollment. Forty-five men had 53 cases of incident NGU (incidence=0.53 per person-year (95% confidence interval [CI] =0.39–0.71)). Incidence of pathogen-associated and idiopathic NGU was 0.06 (95% CI 0.03–0.13) and 0.47 (95%CI = 0.34–0.63), respectively. After adjustment for age, condom use and new partners during follow-up, risk of incident NGU was higher among black men (adjusted RR (ARR)=2.2; 95%CI=1.1–4.4), those with a history of NGU before enrollment (ARR=3.1; 1.5–6.5) and more sex partners during follow-up (ARR=1.2 per partner; 1.0–1.5); risk was lower among men who used lubricant at last sex (ARR=0.44; 0.20–0.96).
Conclusion Incidence of NGU was high, predominantly idiopathic, and associated with traditional socio-behavioral characteristics, but not age, condom use, or new partners. The lubricant-use association was unexpected and warrants further exploration. More precise daily diary data may yield additional insights.
Disclosure No significant relationships.

P794 SIGNS AND SYMPTOMS ASSOCIATED WITH SINGLE-PATHOGEN NONGONOCOCCAL URETHRITIS IN MEN

[1]Teresa Batteiger*, [2]Stephen Jordan, [3]Evelyn Toh, [2]James Williams, [3]Lora Fortenberry, [1]Byron Batteiger, [3]David Nelson. *[1]Indiana University School of Medicine, Medicine, Division of Infectious Diseases, Indianapolis, USA; [2]Indiana University School of Medicine, Infectious Diseases, Indianapolis, USA; [3]Indiana University School of Medicine, Microbiology and Immunology, Indianapolis, USA*

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Background Syndromic management remains the standard nongonococcal urethritis (NGU) treatment approach. Whether pathogen-specific signs/symptoms inform treatment decisions remains unclear. We identified men with single- and mixed-pathogen NGU and assessed for the presence of pathogen-specific signs or symptoms to improve syndromic management.
Methods As part of an ongoing cohort study (the Idiopathic Urethritis Men's Project [IUMP]), we recruited men with NGU. NGU was diagnosed by signs and/or symptoms of urethritis, and a urethral Gram stain with ≥5 neutrophils per high-power field without evidence of gram negative intracellular diplococci. Participants underwent a clinical history and physical exam, which documented specific self-reported symptoms and clinician observed signs. Single- and mixed-infections were identified by NAAT testing of first-catch urine for *Neisseria gonorrhoeae* (NG), *Chlamydia trachomatis* (CT), *Mycoplasma genitalium* (MG), *Trichomonas vaginalis* (TV), and *Ureaplasma urealyticum* (UU); five-pathogen-negative cases were classified as idiopathic urethritis (IU).
Results One hundred fifty-five men with NGU are included in this analysis. The median age was 28 (range 18–63), 101 (65%) were African American, and 135 (87%) self-identified as heterosexual. The most commonly reported symptom was urethral discharge (92%), followed by burning/tingling (37%), and dysuria (28%). Over half of these men reported more than one symptom (58%). Single-pathogen NGU was detected in 99 (64%) men, mixed-pathogen in 14 (9%), and IU in 42 (27%). For single pathogen NGU, 53 (34%) had CT, 26 (17%) had MG, 3 (2%) had TV, and 17 (11%) had UU. We compared single-pathogen NGU, mixed-infection and IU for differences in signs or symptoms and found no pathogen-specific differences.
Conclusion In men with NGU, no pathogen-specific signs and symptoms were identified that could inform treatment decisions. Pathogen-specific point-of-care tests are needed.
Disclosure No significant relationships.

P795 PREVALENCE AND ETIOLOGY OF POST-AZITHROMYCIN PERSISTENT NON-GONOCOCCAL URETHRITIS (NGU) SYMPTOMS IN MEN

[1]Stephen Jordan*, [2]Evelyn Toh, [3]Teresa Batteiger, [1]James Williams, [2]Lora Fortenberry, [1]Byron Batteiger, [2]David Nelson. *[1]Indiana University School of Medicine, Medicine, Division of Infectious Diseases, Indianapolis, USA; [2]Indiana University School of Medicine, Microbiology and Immunology, Indianapolis, USA; [3]Indiana University School of Medicine, Indianapolis, USA*

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Background Persistent NGU occurs when symptoms persist after empiric NGU treatment and has been associated with *Mycoplasma genitalium* (MG) infection. The prevalence and etiology of persistent NGU in men remains largely unknown.

Methods Within the Idiopathic Urethritis Men's Project cohort study, we recruited men with NGU. NGU was diagnosed by the presence of urethritis signs and/or symptoms and urethral Gram stain with ≥5 PMN/HPF. Men were treated with 1 gm azithromycin and returned for a 1-month test-of-cure visit. At the test-of-cure visit, men were asked about post-treatment symptom outcomes and partner treatment. A first-catch urine specimen was obtained at both visits for five-pathogen testing for *Neisseria gonorrhoeae* (NG),*Chlamydia trachomatis* (CT), MG, *Trichomonas vaginalis* (TV), and *Ureaplasma urealyticum* (UU). NG-positive cases were excluded and five-pathogen-negative cases were classified as idiopathic urethritis (IU). Post-treatment symptom outcomes were: (1) resolved, (2) resolved then recurred, or (3) persisted unchanged.
Results One hundred twenty-four men are included in this study. The median age was 28, 52% were African American, and 86% self-identified as heterosexual. All men reported urethral symptoms and 98% had a discharge on exam at baseline. Symptoms resolved completely in 91 (73%) men. Symptoms resolved then recurred or persisted unchanged in 12 (10%) and 21 (17%) men, respectively. Excluding men with untreated partners (N = 9, 28%), a different pathogen was identified in 5 (50%) and 4 (25%) men with recurrent and persistent symptoms, respectively. In men with the same pathogen identified (N = 15), 53% were IU, 33% were MG, 7% were CT, and 7% were UU.
Conclusion Persistent NGU occurs in approximately 25% of azithromycin-treated men and is related to a new infection in up to 50% of cases. In men with persistent symptoms and the same infection identified at the test-of-cure visit, MG and IU comprised 86% of cases, which suggests that MG and IU-associated organisms may be resistant to azithromycin.
Disclosure No significant relationships.

P796 REASSESSING THE GRAM STAIN SMEAR (GSS) POLYMORPHONUCLEAR LEUKOCYTE (PMN) CUTOFF FOR DIAGNOSING NON-GONOCOCCAL URETHRITIS (NGU)

[1]Gina Leipertz*, [1]Laura Chambers, [2]Sylvan Lowens, [2]Jennifer Morgan, [1]Sarah Romano, [1]Tashina Robinson, [3]Lindley Barbee, [3]Matthew Golden, [1]Lisa Manhart. *[1]University of Washington, Epidemiology, Seattle, USA; [2]Public Health – Seattle and King County, Seattle, USA; [3]University of Washington, Medicine, Seattle, USA*

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Background Recommended cutoffs for PMNs per high-power field (hpf) to define NGU vary. CDC treatment guidelines specify ≥2 PMNs/hpf. Other guidelines recommend ≥5 PMNs/hpf.
Methods From 08/2014-08/2018, we enrolled symptomatic and asymptomatic male STD clinic patients ≥16 years with exclusively female partners in the past year. Men with gonorrhea or antibiotic use in the past month were excluded. We collected a urethral swab for GSS and urine for *Chlamydia trachomatis*(CT) and *Mycoplasma genitalium* (MG) testing (Aptima, Hologic). We calculated Youden's Index (J=sensitivity +specificity-1), which maximizes sensitivity and specificity, and calculated the proportions of CT/MG cases missed and cases treated in the absence of CT/MG (test-negative) for three PMN/hpf cutoffs. CT/MG co-infections (N=3) were excluded.
Results Among 369 participants, median age was 32 (range 17–71), 53% were white, and 25% were black. Among all men with 0-1, 2-4, 5-9, and ≥10 PMNs/hpf, CT prevalence was 1%, 5%, 11%, and 26%, respectively; MG prevalence was 5%, 3%, 15%, and 17%. J was maximized at ≥5 PMNs/hpf for CT, MG, and CT/MG. Thirteen percent, 17%, and 33% of CT/MG cases were missed at the ≥2, ≥5, and ≥10 PMNs/hpf cutoffs, respectively; 45%, 33%, and 21% of test-negative cases were treated. Among symptomatic men (N=166) with 0-1, 2-4, 5-9, and ≥10 PMNs/hpf, CT prevalence was 0%, 20%, 12%, and 31%, respectively; MG prevalence was 9%, 0%, 18%, and 19%. J was maximized at ≥5 PMNs/hpf for MG, and ≥10 PMNs/hpf for CT and CT/MG. Five percent, 8%, and 25% of CT/MG cases were missed at the ≥2, ≥5, and ≥10 PMNs/hpf cutoffs, respectively; 72%, 64%, and 43% of test-negative cases were treated.
Conclusion The increase in missed CT/MG cases between the ≥2 PMNs/hpf cutoff and ≥5 PMNs/hpf cutoff was minimal; the ≥5 PMNs/hpf cutoff treats fewer cases without CT/MG. The ≥5 PMNs/hpf cutoff appears optimal in this population.
Disclosure No significant relationships.

P797 ANTIBODY RESPONSE TO *MYCOPLASMA GENITALIUM* IN LONGITUDINALLY INFECTED MEN WITH NON-GONOCOCCAL URETHRITIS

[1]Gwendolyn Wood*, [1]Stefanie Iverson Cabral, [2]Lisa Manhart, [3]Sylvan Lowens, [2]Catherine Gillespie, [4]Patricia Totten. *[1]University of Washington, Seattle, Seattle, USA; [2]University of Washington, Epidemiology, Seattle, USA; [3]Public Health – Seattle and King County, Seattle, USA; [4]University of Washington, Infectious Diseases, Seattle, USA*

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Background A sensitive and specific serologic test is needed to evaluate the association of *Mycoplasma genitalium* (MG) infection with serious upper reproductive tract sequelae in women. In this study, we compared the ability of immunoblot and ELISA methods to detect serum antibody reactivity with the immunodominant MgpB and MgpC adherence proteins among MG-infected men with nongonococcal urethritis (NGU).
Methods Serum samples collected at two time points (spanning 15–86 days) from 22 MG-infected, PCR-positive men with NGU were assayed for reactivity to MG whole cell lysates by immunoblot, and to the conserved C-terminus of MgpB by ELISA, compared to 19 MG-negative controls. Additionally, we selected six MG(+) men with a variety of immunoblot reactivities and examined their serum specimens for ELISA reactivity to 16 recombinant peptides spanning conserved and variable domains of MgpB and MgpC at two time points.
Results Among men with current MG infection, immunoblot detection of MgpB antibodies outperformed an ELISA assay detecting reactivity to the conserved C-terminus of MgpB with 90.9% and 81.8% sensitivity, and 92.3% and 82.3% specificity, respectively. In contrast to immunoblot results, ELISA-reactivity to individual peptides spanning MgpB and MgpC indicated patient antibodies more frequently targeted the C-terminus of MgpC than the C-terminus of MgpB. As expected, most patient sera reacted poorly in ELISAs to recombinant peptides spanning the MgpB and MgpC variable regions as these sequences corresponded to the G37 type strain rather than the infecting strains.
Conclusion Our findings suggest that an MG ELISA test could be improved by including conserved portions of both the MgpB and MgpC proteins, providing an alternative to the more labor intensive immunoblot. Such a test will be especially valuable for associating current or past MG infection with serious upper reproductive tract disease in women.
Disclosure No significant relationships.