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)

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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

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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.