Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

CONCLUSIONS: Female genital tuberculosis is presumed rare in the US but may become more common as more women from tuberculosis endemic countries present for care. The presentation of female genital tuberculosis can mimic other gynecologic conditions such as endometrial cancer and tubo-ovarian abscess. The diagnosis is challenging and often requires endometrial biopsy. The consequences of delayed diagnosis can be significant, including inability to conceive or vertical transmission with a future potential pregnancy. We propose starting workup with both IGRA and PPD, although if clinical suspicion remains high negative test results should not preclude further diagnostic studies.

Table 1: Characteristics of patients presenting with female genital tuberculosis

	Age at diagnosis	Time from presentation to diagnosis	Country of Origin	Presentation	IGRA result	PPD result	Microbiology or Pathology Results	Treatment/ Outcome
Patient 1	28	Unknown	South Africa	Amenorrhea, infertility	Positive	Negative	Endometrial biopsy with granulomas	Treated x 6 months, unable to conceive post-treatment
Patient 2	30	4 months	Somalia	Spontaneous abortion x2	Positive	Not done	Cervical lymph node biopsy M. tuberculosis PCR +	Found to have cervical lymphadenopathy during workup, treated x 6 months, 1 ectopic pregnancy after treatment
Patient 3	36	2 years	Ethiopia	Miscarriage, amenorrhea	Not done	Positive	Endometrial biopsy culture + for M. tuberculosis	Treated x 6 months, no successful conception after treatment
Patient 4	32	2 years	India	Infertility, IVF resulting in cornual pregnancies	Not done	Positive	Nodular, thickened tubes, no growth on micro	Treated x 9 months, no microbial or path confirmation obtained
Patient 5	32	3 years	India	Infertility	Positive	Not done	Endometrial biopsy samples - by culture and PCR for M. tuberculosis	Treated x 4 months with presumed culture negative disease, No follow-up after treatment completion
Patient 6	62	8 months	Mexico	Post-menopausal bleeding	Not done	Not done	Multiple non-caseating necrotizing granulomas, M. bovis grown	Treated for M. bovis x 9 months, symptoms resolved
Patient 7	71	2 months	Somalia	Abdominal pain, adnexal mass	Not done	Positive	Granulomatous endometritis, culture + for M. tuberculosis	Treatment x 9 months
Patient 8	78	3 months	USA	Post-menopausal bleeding	Not done	Positive	Granulomatous endometritis, acid fast stain	Lost to follow-up after diagnosis,

7 Co-infection of Bacterial Vaginosis and *Mycoplasma Genitalium* in Pregnant Women

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OBJECTIVES: Bacterial vaginosis (BV) is a common infection in women of reproductive age and is estimated to have a prevalence of 29.2% in the United States. BV is often asymptomatic but has been linked with pelvic inflammatory disease and preterm delivery. BV has also been associated with an increased risk of sexually transmitted infections (STIs) including *Chlamydia trachomatis*, *Neisseria gonorrhoeae,* and human immunodeficiency virus. *Mycoplasma genitalium* is an emerging STI that has been associated with pelvic inflammatory disease, infertility, and adverse birth outcomes. The objective of this study is to investigate the association between BV and *M. genitalium* co-infection in pregnant women.

METHODS: Cervical samples were collected from pregnant women at intake to care (aged 14-46 years old) from September 2019 through March 2020 at several academic hospitals in Houston, Texas. The samples were tested for BV using routine point of care wet mount testing and Hologic® transcription-mediated amplification (Marlborough, MA) if patient symptomatology was consistent with BV, or by physician choice. *M. genitalium* testing was performed on all samples using Hologic® transcription-mediated amplification. Demographic, obstetric, and STI co-infection information was obtained through chart review. Welch's two sample t-test was used for analysis of demographic data, and Chi square analysis was used to determine the association between BV and *M. genitalium* co-infection during pregnancy.

RESULTS: Of the 1,211 samples collected, 41 (3.39%) were positive *for M. genitalium*, and 2 samples were inconclusive. Only 600 women had available BV testing performed during pregnancy, and 196 (32.7%) were positive. Data analysis was performed on 598 patients with a conclusive *M. genitalium* and BV test. *M. genitalium* infection was significantly associated with BV co-infection ($p=0.04$). The mean age of women infected with *M. genitalium* was younger at 25.2 years than noninfected women at 28.5 years ($p=0.001$), but this difference was not noted between BV infected patients and noninfected patients. *M. genitalium* and BV co-infection were noted in a significantly higher percentage of black patients than non-black patients ($p< 0.05$) and in a lesser percentage of patients of a Hispanic ethnicity ($p< 0.05$). Results are shown in Table 1.

CONCLUSIONS: The results of this study suggest that BV infection may increase the risk of *M. genitalium* co-infection in the pregnant population. Management of BV during pregnancy may be important in preventing adverse perinatal outcomes associated with *M. genitalium.*

Table 1: *M. genitalium* and BV co-infection during pregnancy

	***M. genitalium* positive (N=35)**	***M. genitalium* negative (N=563)**	**p-value**
BV positive	17	179	0.040*
BV negative	18	384	

Demographic Factor	M. Gen Positive N=35	M. Gen Negative N=563	P-value	BV Positive N=196	BV Negative N=402	P-value
Age in years	25.2 (SD 5.22)	28.5 (SD 6.86)	0.001*	27.6 (SD 7.05)	28.6 (SD 6.69)	0.100*
Gravity	2.83 (SD 2.51)	3.27 (SD 1.98)	0.310*	3.09 (SD 2.06)	3.33 (SD 1.99)	0.179*
Parity	1.14 (SD 1.38)	1.73 (SD 2.11)	0.023*	1.48 (SD 1.51)	1.80 (SD 2.29)	0.040*
Race	**N=35**	**N=562**		**N=196**	**N=401**	
Black	16	95	< 0.05**	54	57	< 0.05**
Non-Black	19	467		142	344	
Ethnicity	**N=35**	**N=560**		**N=195**	**N=400**	
Hispanic	18	434	0.001**	134	318	0.004**
Non-Hispanic	17	126		61	82	

*Calculated with Welch's two sample t-test **Calculated with Chi-square analysis

8 Universal SARS-CoV-2 Screening Among Obstetric Patients in Ottawa, Canada

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OBJECTIVES: Our objective was to determine the prevalence of maternal SARS-CoV-2 infection in pregnancy through universal virus and antibody testing of pregnant patients presenting to obstetrical units within a tertiary care hospital in Ottawa, Canada.

METHODS: This was a cross-sectional study of pregnant patients presenting to obstetrical triage units at The Ottawa Hospital (TOH − General and Civic campuses). Universal testing for SARS-CoV-2 infection was implemented during the second pandemic wave between October 19th and November 27th, 2020. Maternal swab (nasopharyngeal or oropharyngeal) and blood samples (venipuncture or dried blood spot) were collected and analyzed for SARS-CoV-2 using digital droplet polymerase chain reaction and SARS-CoV-2-specific antibodies using enzyme-linked immunosorbent assays. Hospital encounter and laboratory testing data were obtained from TOH Data Warehouse and linked to provide study denominators and identify additional SARS-CoV-2-positive results among participants during the study period. Study data were linked with the Better Outcomes Registry & Network (BORN) Ontario provincial birth registry to supplement participant demographic and clinical information.

RESULTS: A total of 395 pregnant patients were enrolled into the study. Among the 283/395 (71.6%) patients who provided a swab sample, 2/283 (0.7%) were positive for SARS-CoV-2. Serological testing was completed for 355/395 (89.9%) patients, of which 13 (3.7%) were positive for SARS-CoV-2-specific antibodies suggesting prior exposure to SARS-CoV-2. Among those positive for SARS-CoV-2 antibodies, many were positive for more than one specific-antibody: 10 (2.8%) had IgA antibodies, 9 (2.5%) had IgG antibodies and 5 (1.4%) had IgM antibodies. Antibody levels in these samples were variable as expected from a random sample of varying exposures.

CONCLUSIONS: In this obstetric population, the seroprevalence of SARS-CoV-2 was higher than the SARS-CoV-2 PCR-positivity (3.7% versus 0.7%). The prevalence of active infection found in this study was lower than the general Ottawa population during the same period (2.3%). This likely reflects greater precautions taken by this population to prevent potential transmission during the second wave. Analyses of maternal and perinatal outcomes by seropositive and seronegative patients are ongoing.

9 Association between Complete Blood Count Ratios and Chorioamnionitis in Women with Sexually Transmitted Infection During Pregnancy

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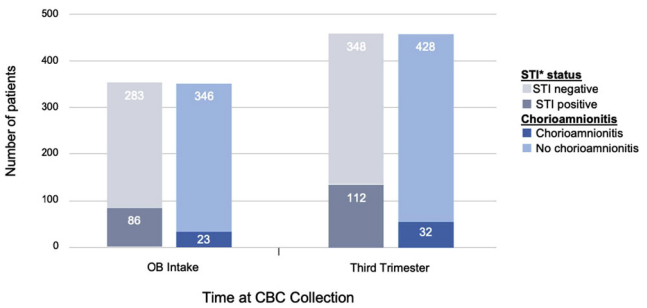
OBJECTIVES: It is a public health priority to identify affordable, time-sensitive methods to prevent or attenuate adverse birth outcomes (ABOs), many for which intrauterine inflammation plays a causal role in their pathophysiology. Recent studies show an association between various ABOs and complete blood count (CBC) indices (values and ratios) across multiple gestational ages. We aimed to investigate the association between ABOs in pregnant women with sexually transmitted infection (STI) and CBC indices collected at obstetric (OB) intake and third trimester.

METHODS: We performed a prospective cohort study of women who delivered between September 2019 and September 2020 at several academic centers. Demographic, obstetric, and neonatal variables were abstracted, including STI status, preterm birth (PTB, <37 weeks), low birth weight (LBW, <2500 grams), neonatal sepsis, chorioamnionitis, and endometritis. CBC values and ratios of neutrophil-to-lymphocyte (NLR), lymphocyte-to-monocyte (LMR), and platelet-to-lymphocyte (PLR) at OB intake and third trimester were recorded. Wilcoxon rank sum test was used to assess differences in CBC indices and STI with perinatal outcomes. Separate models for each CBC index and an interaction term with STI were used to calculate odds ratios between CBC indices and outcomes based on the presence of STI.

RESULTS: Of the 931 women with CBC indices recorded, 194 (20.8%) were STI positive (Figure 1). There were no differences in CBC indices at OB intake in women with and without STI. However, the STI group had a higher monocyte count (p=0.008). There were no differences in CBC indices based on infectious agent type (bacterial, viral, parasitic). A significant interaction term was found for chorioamnionitis at OB intake for LMR (p=0.0486) and in the third trimester for PLR (p=0.0199) and NLR (p=0.0318). When adjusted for STI status, CBC ratios associated with significantly different odds of chorioamnionitis included: decreased LMR at intake for the STI-negative group (OR=0.751) and increased PLR (OR=1.016) and NLR (OR=1.342) in the STI group in the third trimester. There were no associations between CBC indices with PTB, LBW, endometritis, and neonatal sepsis after adjusting for STI.

CONCLUSIONS: Intrauterine inflammation, importantly antenatal STI and chorioamnionitis, is a well-established cause of ABOs and can be characterized by the CBC with differentials. To date, our study is the first to investigate the association between CBC indices and ABOs in pregnant patients with STI(s). LMR at OB intake was associated with a lower odds of chorioamnionitis in STI-negative pregnant women and PLR and NLR in the third trimester were associated with higher odds of chorioamnionitis in STI-positive pregnant women. Further study is needed to validate these results, determine the earliest gestational age when these differences can be detected, and subtype clinical versus subclinical chorioamnionitis.

Figure 1 STI status and chorioamnionitis and time at CBC collection



*STIs: Human papilloma virus, *Trichomonas vaginalis, Chlamydia trachomatis, Neisseria gonorrhoeae, Mycoplasma genitalium,* Human immunodeficiency virus, Hepatitis B virus, Hepatitis C virus, Syphilis, Herpes Simplex virus.