Disclosures. Alisa W. Serio, PhD, Paratek Pharmaceuticals, Inc. (Employee, Shareholder) S. Ken Tanaka, PhD, Paratek Pharmaceuticals, Inc. (Employee, Shareholder) Kelly Wright, PharmD, Paratek Pharmaceuticals, Inc. (Employee, Shareholder) Lynne Garrity-Ryan, PhD, Paratek Pharmaceuticals, Inc. (Employee, Shareholder)

1203. Systemic, Mucosal Immune Activation And Psycho-sexual Health in HIV-Infected And Uninfected Women: Evaluation of Biomarkers And Environmental Stimuli

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Session: P-53. Microbial Pathogenesis

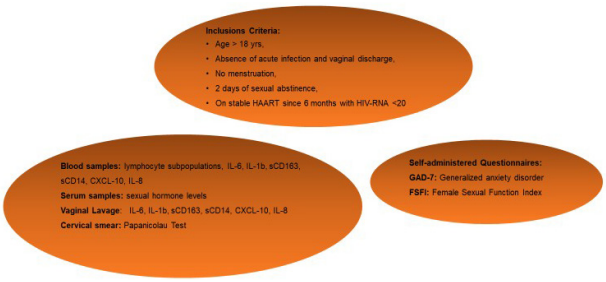
Background. HIV infection in women in disproportionate ratios as compared to men has been a grave concern over the years. It is in proportion to reproductive and hormonal differences making women more vulnerable. It elicits an Immune response which can be monitored by analysing various factors such as mucosal immunity, sexual behaviour, biomarkers in the plasma, serum and vaginal lavage and vaginal infections.

Aim. Evaluating and comparing the systemic and mucosal immuno-inflammatory status, the female sexual function (FSF) and generalized anxiety in HIV+ women on successful HAART with healthy women (HW).

Methods. We enrolled 53 subjects (23 HIV+ women on successful HAART and 30 Healthy women (HW)) with no statistical differences in age. The figure (named: methodology) below explains the methods applied:

Cytometry and Kit ELISA were used to estimate lymphocytes and all cytokines. Women were also tested for co-morbidities such as diabetes, blood pressure, HCV, cervical cancer etc. Statistical analysis was performed using PRISM 8.0.

Methodology



Results. Higher CD4 and CD8 cell count was observed in HW compared to HIV+ women (p=0.02,p=0.004).Plasma levels of sCD 163, CXCL-10, IL-1, IL-6 and IL-8 were significantly higher in HIV women as compared to HW(p< 0.001), while IL-6 and IL8 were lower in the VL of HIV women. An ASCUS in HW was found for PAP Test. CXCL-10 was correlated to estradiol levels (r=0.8, p=0.02). 57% reported FSD and 43% had a FSFI score≤10. A significant difference between the two groups in the FSFI score (p=0.007) was found, particularly in sexual desire, arousal and pain. A positive correlation between level of testosterone and FSFI score was found only in HIV+ women (p=0.02; r= 0.74). 17% of women presented an anxiety disorder. Z-index was associated with orgasm domains (p=0.01; r=-0.4) and CD4+ T cells (p=0.02; r=-0.45).

Conclusion. Higher plasma levels of the cytokines despite successful antiretroviral therapy were observed. At the mucosal level evaluating the balance within pro anti-inflammatory cytokines and micro-biome will be interesting to study. FSD is detected in more than half of HIV infected women and seems to be related to testosterone levels. The comparison with uninfected women underlying a persistent gap in quality of life of young HIV women should be bridged.

Disclosures. **All Authors**: No reported disclosures

1204. The Effect of Coinfection with Babesiosis and Lyme Disease on Novel Biomarkers

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Session: P-53. Microbial Pathogenesis

Background. Current literature presents conflicting results regarding the clinical manifestations of coinfection with *Babesia microti* (Babesiosis) and *Borrelia burgdorferi* (Lyme disease). The aim of this study is to investigate the effect that coinfection with Babesiosis and Lyme Disease has on standard and novel biomarkers markers such as C-reactive protein (CRP), erythrocyte sedimentation rate (ESR) and procalcitonin (Pc), which may assist in elucidating how these pathogens interact within human hosts.

Methods. Babesia cases were collected from Stony Brook University Hospital from 2012 to 2019. Cases of Babesia were included if parasites were detected by peripheral blood smear and confirmed by PCR. Lyme disease diagnosis criteria involved 2-tier testing per CDC guidelines. Cases were divided into three cohorts based on if they had CRP, ESR or Pc tested. Cohorts were divided into two groups: Babesiosis alone vs coinfection with Lyme Disease. Median values were analyzed for the following biomarkers across both groups: parasitemia, hemoglobin (Hgb), white blood cells (WBC), platelets, indirect bilirubin (IB), lactate dehydrogenase, ESR, CRP and Pc. Fisher Exact and Wilcoxon Rank sum tests were used and P values < 0.05 were considered statistically significant.

Results. ESR values trended higher in monoinfection compared to coinfection (50 vs 36 mm/hr, p=0.63). Within this cohort, the coinfection group had significantly lower platelet values compared to monoinfection (52 vs. 75.5 K/uL, p=0.04, Table 1). Within the CRP and Pc cohorts, monoinfection had higher trends of parasitemia compared to coinfection (CRP group: 1.6 vs 0.7%, p=0.14, Pc group: 1.4 vs 0.7% p=1.0, Table 2&3). Pc levels were similar in both groups (1.1 vs 1.2 ng/mL, p=1.0, Table 3).

Table 1: Demographics and Biomarkers for Patients with Babesiosis Monoinfection vs. Coinfection with Babesiosis and Lyme Disease that had ESR Measured.

N=17	Infection Status		
	Babesiosis Monoinfection (N=10)	Coinfection with Lyme Disease (N=7)	P-value
Age, Median (IQR)	57.0 (44 – 75)	67.0 (52 – 85)	0.3285
Gender, n (%)			
Male	9 (90.0)	5 (71.43)	0.5368
Female	1 (10.0)	2 (28.57)	
Race, n (%)			
White	7 (70.0)	5 (71.43)	1.0000
Non-White	3 (30.0)	2 (28.57)	
Admitted, n (%)			
No	2 (20.0)	0 (0.0)	0.4853
Yes	8 (80.0)	7 (100.0)	
ICU Admission, n (%)			
No	9 (90.0)	6 (85.71)	1.0000
Yes	1 (10.0)	1 (14.29)	
Hypertension, n (%)			
No	8 (80.0)	6 (85.71)	1.0000
Yes	2 (20.0)	1 (14.29)	
Diabetes, n (%)			
No	9 (90.0)	7 (100.0)	1.0000
Yes	1 (10.0)	0 (0.0)	
CHF/CAD/Arrhythmias, n (%)			
No	8 (80.0)	6 (85.71)	1.0000
Yes	2 (20.0)	1 (14.29)	
Leukemia/Lymphoma, n (%)			
No	9 (90.0)	7 (100.0)	1.0000
Yes	1 (10.0)	0 (0.0)	
Cancer (Other), n (%)			
No	9 (90.0)	6 (85.71)	1.0000
Yes	1 (10.0)	1 (14.29)	
CKD, n (%)			
No	10 (100.0)	6 (85.71)	0.4118
Yes	0 (0.0)	1 (14.29)	
COPD/Asthma, n (%)			
No	8 (80.0)	5 (71.43)	1.0000
Yes	2 (20.0)	2 (28.57)	
Liver Disease, n (%)			
No	9 (90.0)	7 (100.0)	1.0000
Yes	1 (10.0)	0 (0.0)	
Autoimmune Disease, n (%)			
No	8 (80.0)	7 (100.0)	0.4853
Yes	2 (20.0)	0 (0.0)	
Immunocompromised, n (%)			
No	6 (60.0)	7 (100.0)	0.1029
Yes	4 (40.0)	0 (0.0)	
Splenectomy, n (%)			
No	9 (90.0)	7 (100.0)	1.0000
Yes	1 (10.0)	0 (0.0)	
Max Parasitemia (%), Median (IQR)	1.6 (1.2 – 3.5)	1.8 (0.6 – 2.6)	0.4639
Hemoglobin (Hgb) (g/dL), Median (IQR)	10.9 (9.1 – 13.0)	11.5 (7.5 – 13.7)	0.8836
White blood cells (WBC) (K/uL), Median (IQR)	6.0 (4.7 – 7.7)	4.9 (3.5 – 5.2)	0.3055
Platelets (K/uL), Median (IQR)	75.5 (65 – 115)	52.0 (43 – 72)	0.0401
Indirect Bilirubin (IB) (mg/dL), Median (IQR)	0.8 (0.7 – 1.1)	0.8 (0.4 – 1.0)	0.5558
Lactate Dehydrogenase (LDH) (IU/L), Median (IQR) (6 values not recorded)	923 (552 – 1090)	558.5 (381 – 779)	0.3602
Erythrocyte Sedimentation Rate (ESR) (mm/hr), Median (IQR)	50.0 (28 – 88)	36.0 (9 – 71)	0.6254