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RESPONSIBLE EDITORS
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Dra. Paula Schaiquevich
Dra. Hebe Duran

roprevalence of antibodies against SARS-CoV-2 has shown a variable response among the population.
Thus, this work aims to design surface plasmon resonance (SPR) assays to determine the presence of antibodies anti-SARS-CoV-2 and their kinetic characteristics in patient sera. In addition, we evaluated the presence of pro-inflammatory cytokines in early infection.
Sera were obtained from infected patients from Hospital Álvarez confirmed by specific PCR and evaluated by commercial tests. For the antibody analysis, assays using full-length r-Spike protein (20/20), r-RBD domain (19/20), and r-Nucleoprotein (15/20) immobilized into a CM5 chip were performed. ELISAs and WBs were used to corroborate the results. SPR assays with r-RBD showed that 10% of the sera from infected patients display a distinct behavior, expressing kinetic association rates two times higher than control samples (10^4 vs 10^5 $M^{-1}.s^{-1}$, $p<0.05$). Also, when analyzing in vitro its ability to neutralize the infection capability with a pseudovirus particle, we found it was eight times higher than control sera ($p<0.05$). Also, TNF-α in positive sera showed higher levels than sera from not infected in half of the patients ($p<0.5$) analyzed by SPR using a TNF receptor capture on a CM5 chip.
In conclusion, we successfully developed an alternative method to determine the seroprevalence of antibodies against three antigens of SARS-COV-2 in real-time. In addition, it allows us to analyze the kinetic parameters of the antibodies and the humoral response, which would correlate with the neutralizing capacity of the sera.

210. (451) **THERAPEUTIC POTENTIAL OF 16α-BROMOEPIANDROSTERONE AS ADJUVANT FOR THE TREATMENT OF TUBERCULOSIS INFECTION**

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Purpose: Despite being preventable and curable, tuberculosis (TB) is one of the principal causes of death worldwide. Macrophages play a key role in controlling *Mycobacterium tuberculosis* (*Mtb*) infection. In search of an adjuvant for TB treatment, we aimed to study a synthetic derivate from DHEA, 16α-Br-epiandrosterone (HE2000) as a modulator of bacterial growth and *Mtb*-induced immune response in human macrophages.
Methods: Minimal inhibitory concentration (MIC) test was performed by growing *Mtb* H37Rv in the presence of HE2000. Bacterial intracellular growth was evaluated by incubating *Mtb* infected THP-1 macrophages at different time points in the presence of HE2000. After 21 days of culture, colony-forming units (CFU) were quantified. Phagocytic activity was assessed by treating infected macrophages with HE2000 and stained by the Ziehl Neelsen technique. Nonparametric tests were used and a $p<0.05$ was considered significant.
Results: MIC assay showed different concentrations at which HE2000 inhibited bacterial proliferation, finding significant differences with control at 0,5 µg/ml ($p<0.001$), 2 µg/ml ($p<0.05$) and 16 µg/ml ($p<0.01$). Also, the concentrations under study were effective in enhancing the phagocytic capacity of infected macrophages, which was evident within 1 hour post-infection ($p<0.001$). These observations were confirmed by Ziehl Neelsen staining, showing a significantly higher number of bacteria per cell in HE2000-treated macrophages ($p<0,01$). Finally, cells exposed to HE2000 showed significantly enhanced bacterial killing after 4 days of culture compared to untreated cells ($p<0.01$).
Conclusion: This study suggests that HE2000 enhances the phagocytic and microbicidal activities of *Mtb* infected macrophages. Therefore, this compound may be considered as adjuvant therapy for tuberculosis infection.

211. (474) **NATURAL ANTIBODY RESPONSE AGAINST SARS-COV-2 INFECTION IS A MATTER OF TIME AND AGE**

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OBJECTIVES: To analyze antibodies levels against SARS-CoV-2 along time in natural infection in healthcare workers. Patients' serum samples (n=174) were collected at 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10 months after positive qPCR results. Most patients presented mild to moderate symptoms and had an age range between 25 and 80 years. To perform the analysis of the antibody levels we used proteins Spike and RBD in a single enzyme-linked immunosorbent assay (ELISA) plate (COVIDAR IgG). Results are expressed as median (min-max). ANOVA was performed in order to statistical evaluation. RESULTS: Antibodies levels increased over time, being that the highest levels were obtained at 10 months. In patients over 55 years old, the antibodies levels were higher than in younger groups (<45 yo) if we consider the total of the samples throughout all the months 8.0 (0.9-14.3) vs 4.3 (0.1-15.8); $p<0.01$. However, if we compare the different age groups at 3 and 6 months after positive qPCR results, no significant differences were detected. Furthermore, no significant differences concerning gender were observed. Concluding remarks, natural infection antibodies levels longlast at least over ten month after positive qPCR and differences between distribution of age were observed. These results contribute to the knowledge of the humoral specific antibody response in unvaccinated patients who had a positive result for SARS-CoV-2 qPCR.

212. (475) **CHRONIC ADMINISTRATION OF THE ANTIDEPRESSANT FLUOXETINE IMPACT ON *YERSINIA. ENTEROCOLITICA* ORAL INFECTION AND REACTIVE ARTHRITIS DEVELOPMENT IN TNFR1 DEFICIENT MICE**

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Fluoxetine (FLX) is a selective serotonin reuptake inhibitor (SSRIs) with antidepressant and immunomodulatory effects. Whether FLX treatment impacts gastrointestinal bacterial infections and their sequelae, such as Reactive arthritis (ReA), remains unknown. We investigated the FLX effect on *Yersinia enterocolitica* (Ye) O:3 infection and ReA in a TNFR1 knockout mouse model. Differences in male and female mice were also evaluated. Male and female TNFR1 KO mice were orally infected with Ye O:3 ($1\text{-}5x10^8$ colony-forming units). From infection day, FLX (20 mg/kg/day) or water (control) was administrated in drinking water. On day 5, the number CFU was determined in stool, spleen, and mesenteric lymphoid nodes. The weight, mobility, mortality, and arthritis score of the mice were recorded. On day 21, splenic dendritic cells (DCs) infiltration and their maturation markers were evaluated by flow cytometry in surviving mice. We found that male TNFR1 KO mice have lower survival and higher clinical score after Ye infection. On day 5, FLX treatment increased bacterial dissemination in males. Surviving mice developed ReA but females treated with FLX showed greater severity than controls. Furthermore, FLX mice showed a lower proportion of splenic DCs without changing in CD86 expression. We conclude that TNFR1 KO male mice are more susceptible than females to Ye infection. The modulatory effect of FLX hinders more the immune response of males increasing systemic bacterial spread. Finally, the chronic administration of FLX did not reduce the severity of ReA and, in contrast, increased it in females. Although DCs infiltration in the spleen was reduced, the expression CD86 marker did not change, so we infer that the increased arthritis severity could be related to defective DCs migration. The results contribute to understanding how antidepressant chronic treatment influences the immune responses against pathogens and the maintenance of immune homeostasis.

213. (481) **STUDY OF GENES REGULATED BY THE GLUCOCORTICOID RECEPTOR IN PERIPHERAL BLOOD AND PLEURAL FLUID MONONUCLEAR CELLS FROM PATIENTS WITH PLEURAL TUBERCULOSIS**

Georgina Gallucci[1], Estefanía Massa[1], Matilde Imhoff[1], Bettina Bongiovanni[1], Ariana Díaz[1], Natalia Santucci[1], Diego Bér-