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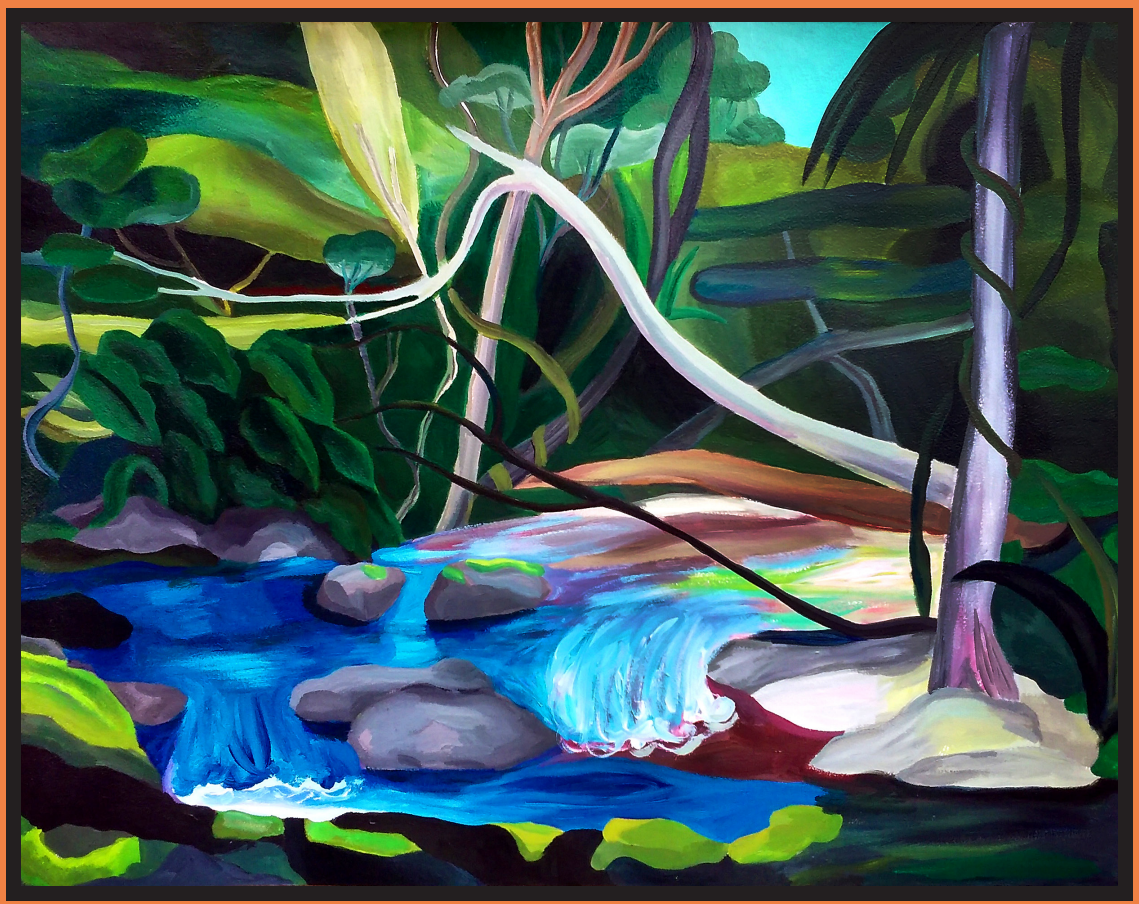

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REUNIÓN CONJUNTA SAIC SAB AAFE AACYTAL 2023

LXVIII REUNIÓN ANUAL DE LA
SOCIEDAD ARGENTINA DE INVESTIGACIÓN CLÍNICA
(SAIC)

XXV JORNADAS ANUALES DE LA SOCIEDAD
ARGENTINA DE BIOLOGÍA
(SAB)

LV REUNIÓN ANUAL DE LA ASOCIACIÓN
ARGENTINA DE FARMACOLOGÍA EXPERIMENTAL
(AAFE)

VIII REUNIÓN CIENTÍFICA REGIONAL DE LA
ASOCIACIÓN ARGENTINA DE CIENCIA Y
TECNOLOGÍA DE ANIMALES DE LABORATORIO
(AACYTAL)

15-17 de noviembre de 2023
Hotel 13 de Julio – Mar del Plata

EDITORES RESPONSABLES
Dra. Isabel Luthy
Dra. Silvina Pérez Martínez
Dr. Ventura Simonovich
Dr. Gabriel Pinto

JOINT MEETING SAIC SAB AAFE AACYTAL 2023

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13 de Julio Hotel – Mar del Plata

RESPONSIBLE EDITORS
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Rodriguez Jimena [1,2], Abrahan Luciana[1,2], Diaz Ariza Maria [2]
Consejo Nacional de Investigaciones Científicas Técnicas (CONICET). [1] Instituto Universitario de Ciencias de la Salud, Fundación Barceló.[2]

Infection by the Trypanosoma cruzi parasite, which causes Chagas disease, is a major public health problem. This disease is transmitted to man, for the most part, vectorially through hemipterous blood-sucking insects belonging to the Triatominae subfamily (WHO, 2021). Currently, in the province of La Rioja, there are no studies carried out in peri-urban and rural areas carried out on blood samples from human patients and on samples of *T. infestans* obtained within the home and around the home, which allow detecting the presence of the parasite. These antecedents, added to the absence of official data and/or public access, lead us to consider as objective of this project, to know the prevalence of infection by *T. cruzi* in people and *T. infestans* captured from different peri-urban and rural areas of the province of La Rioja as a strategic instrument for planning and conducting the health system in the knowledge of profiles, risk factors, including living conditions, in population units-space for Chagas disease. 2009 participants were studied between the years 2019 and 2022 by serology for T. cruzi infection. The presence of intra- and peri-domicile triatoma infestans was evidenced in areas where seropositive patients live in the southeast and southwest of the province of La Rioja with the highest prevalence. Although the inspection of T. cruzi by optical microscopy in *triatoma infestans* was negative, they are found in coexistence. Through Epi INFO 7.2, a map was created showing the relationship between areas with seropositive patients and areas with the presence of *Triatoma infestans.* Paying attention only to the total number of cases observed or the general incidence observed in the population and verifying that it is within the expected limits may be insufficient. The use of maps to present data on the distribution of *Triatomas infestans* and seropositive patients facilitates the identification of clusters and provides important clues about the presence of common sources of infection and risk exposures (WHO,2021).

O1-INFECTOLOGY & IMMUNOLOGY

FRIDAY 17TH NOVEMBER 9:00 - 10:30
CHAIRS: ROXANA SCHILLACI
MARIANA MALVICINI

170. 29. **TONSILLAR IMMUNITY OVER TIME, FROM IMMUNE RESISTANCE TO IMMUNE REGULATION**

Rocío A. Pastor[1], Juliana Puyssegur[1], M. Paula de la Guardia[1], Ignacio E. Rojas Campión[1], Andrea Paes de Lima[5], Bibiana Paoli[2], M. Elena Arabolaza[2], Isabel Aspe Scetti[6], Mailén Rojo[1], M. Soledad Collado[1], Andrés Blanco[6], Fernando Chirdo[4], Eloísa I. Arana[1,3]
[1]Institute of Immunology, Genetics and Metabolism (INIGEM), Clinical Hospital 'Jose de San Martín', University of Buenos Aires (UBA), National Council for Scientific and Technological Research (CONICET), Buenos Aires, Argentina. [2]Pediatric Otorhinolaryngology Service, Otorhinolaryngology Division, Clinical Hospital 'Jose de San Martín', UBA, Buenos Aires, Argentina. [3]Department of Immunology, School of Medicine, UBA, Buenos Aires, Argentina. [4]Department of Biological Sciences, Faculty of Exact Sciences, Institute of Immunological and Physiopathological studies (IIFP), University of La Plata (UNLP), National Council for Scientific and Technological Research (CONICET), La Plata, Argentina. [5]Pathology Department, Clinical Hospital 'Jose de San Martín', UBA, Buenos Aires, Argentina. [6]Surgery Department, 'Arauz' Otorhinolaryngology Institute, Buenos Aires, Argentina.

The tonsils are mucosal lymphoid tissue located at the back of the mouth. They are thought to experience involution in adulthood. In this context, we have used tonsillar mononuclear cells isolated from patients at different stages of life, to study age-related changes in mucosal immunity. Likewise, we determined the most prevalent bacterial species within the cohort of patients. To do so, we combined flow cytometry, immunohistochemistry and bacterial culture with subsequent identification of the respective isolates by MALDI-TOF MS. We found an age-dependent reduction in the proportion of germinal center B cell population (BGC, n=76, 4 groups of age, means statistically different, t test) and its T cell counterpart (T follicular helper germinal center cells, TfhGC, n=54, 4 groups of age, means statistically different, t test). Also, we demonstrated an increment in the percentage of local memory B cells (BMEM, same statistics as BGC). Furthermore, younger tonsils rendered a statistically significant higher proportion of proliferative $CD4^+$ and $CD8^+$ T cells than those from older ones (n=37, 5 groups of age, means statistically different, t test). We detected the expansion of a B cell subset metabolically adapted to catabolize adenosine triphosphate (CD20+CD39+CD73+ cells), as patients get older (n=69, 2 groups of age, means statistically different, t test). Finally, the most prevalent bacterial species in tonsilar tissue were *S. aureus*, *H. influenzae* and *S. Pyogenes*, with no difference between age groups. To conclude, our data reflects a reduction in the proportion of effector cells (BGC and TfhGC), an increase in the fraction of BMEM, an enrichment in B cells with regulatory function and the concomitant decrease in proliferative immune cells as the patients age. This study may help predicting disparities in the immune responses to oro-naso-pharyngeal antigenic challenges in the life span of individuals.

171. 117. ***BIFIDOBACTERIUM ANIMALIS* SUBSP. *LACTIS* INL1 CELL-FREE SUPERNATANT ATTENUATES THE INFLAMMATORY RESPONSE OF LPS-STIMULATED MACROPHAGES**

Pedro Carriere[1], María Belén Novoa Díaz[1], Gabriela Sica[2,3], Gabriel Vinderola[4], Natalia Calvo[1], Claudia Gentili[1].
1 Departamento de Biología, Bioquímica y Farmacia, Universidad Nacional del Sur (UNS)- INBIOSUR (CONICET-UNS), Bahía Blanca, Argentina; 2 Departamento de Ciencias de la Salud, UNS, Bahía Blanca, Argentina; 3 Departamento de Biología, Bioquímica y Farmacia, UNS, Bahía Blanca; 4 Universidad Nacional del Litoral (UNL)-INLAIN (CONICET-UNL), Santa Fe, Argentina.

The inflammatory response protects the body against pathogens; however its persistence can lead to inflammatory diseases. This work aimed to explore the effect of the cell-free supernatant (CFS) of the human milk-derived strain *Bifidobacterium animalis* subsp. *lactis* INL1 (*B. lactis* INL1) (transfer agreement UNS-UNL No REC-1092496-2) in an *in vitro* model of inflammation, specifically lipopolysaccharide (LPS)-stimulated RAW264.7 macrophages. To evaluate the mitochondrial integrity of these macrophages, they were pretreated with CFS for 3 hours and then exposed to LPS for 24 hours. By JC-1 assay we observed that LPS maintains mitochondrial health but it increases due CFS pretreatment followed LPS treatment ($p<0,05$), suggesting that CFS from *B. lactis* INL1 has beneficial properties for cell physiology. Next, an *in silico* analysis was performed to identify the signaling pathways associated with the documented effect of the *B. lactis* bacteria on macrophages. Using Cytoscape software, the gene interaction network was obtained. JUN, which encodes the c-jun transcription factor involved in the inflammatory response, was found to be the core gene of the network by betweenness and closeness. Functional enrichment showed that the genes obtained are associated with the inflammatory response, the LPS response, and inflammatory bowel diseases. In addition, we analyzed gene expression data from RAW264.7 macrophage microarrays exposed or not to LPS (GSE21548-GEO). Differentially expressed genes ($Log_2FC \geq 1$ or ≤ -1) showed that the JUN gene was overexpressed in LPS-exposed macrophages ($Log_2FC=1,435$; $padj<0,05$). Based on these data, we study c-jun protein levels status by Western blot in our experimental model. The expression of c-jun increases by LPS action but this effect is attenuated by CFS pretreatment of *B. lactis* INL1 in these cells ($p<0.05$), suggesting that c-jun pathway could be a potential mediator of the effects of *B. lactis* INL1 in the inflammatory context.

172. 245. **PROGNOSTIC SIGNIFICANCE OF THE NEUTROPHIL/LYMPHOCYTE RATIO IN PERPHERAL T-CELL LYMPHOMA: A SYSTEMATIC REVIEW AND META-ANALYSIS**

Rafael Pichardo-Rodriguez[1], Liz B Cordova-Cueva[1], Dante Quiñones-Laveriano[1], Susy Bazán-Ruiz[2], Brady E. Beltrán-Gárate[1], Jhony A De La Cruz-Vargas[1]
[1]Unidad de Análisis y Generación de Evidencia (UAGEV). Instituto de Investigaciones en Ciencias Biomédicas (INICIB). Universidad Ricardo Palma, Lima-Perú.
[2]Escuela de Medicina, Universidad César Vallejo, Piura, Perú.

OBJETIVE: Here we present a systematic review and meta-analysis on the prognostic value of the NLR in PTCL. METHODS: A systematic search encompassed PUBMED, EMBASE, and SCOPUS databases until July 2023. Prospective and retrospective cohorts were evaluated based on WHO criteria for TCL diagnosis. NLR denoted pre-therapy neutrophil-to-lymphocyte ratio. Two reviewers selected studies, extracted data, and performed quality assessments. Variables included clinical characterizes, NLR values, Hazard Ratio (HR), 95% CI. Quality-verified data underwent meta-analysis. Influence analysis employed leave-one-out. Meta-regression gauged impact of <200 sample size on heterogeneity. Primary endpoints: overall survival (OS) and Progression-Free Survival (PFS). Risk of bias was evaluated via Newcastle-Ottawa Scale. Data analyzed using R 4.2.3. RESULTS: Thirteen studies (1,825 patients) were identified, with 3 from Latin America. The median NLR was 3.8. NLR was associated with worse OS (HR: 2 [95% CI: 1.5-2.6, I2: 49%; P=0.02]) in 13 studies. No association between NLR and PFS was observed. Regionally, the NLR was linked to worsened OS in Latin America (HR: 3.4 [95% CI: 1.7-6.9, I2: 40%; P<0.01]) and Asia (HR: 1.8 [95% CI: 1.3-2.4, I2: 45%; P=0.05]). An NLR>4 worsened OS (HR: 1.8 [95% CI: 1.2-2.5, I2: 48%; P=0.06]), but was not observed in PFS. Excluding the study of Zhou et al reduced heterogeneity, while the effect size remained unchanged notable (HR: 1.9 [95% CI: 1.6-2.3, I2: 20%; p<0.01]). Excluding the study of Zhou et al for PFS reduced heterogeneity and increased the effect size (HR: 1.6 [95% CI: 1.2-2.1, I2: 0%; p>0.05]). For OS, there was no evidence of publication bias, and for PFS, the studies were limited in number. A sample size <200 did not have an impact on heterogeneity. CONCLUSION: The NLR is a relevant prognostic factor in PTCL for OS. Inconsistent NLR cutoffs across studies suggest standardization. Cut-off >4 could be a promising biomarker for LATAM patients.

173. 260. **COMBINED TREATMENT OF NIR RADIATION AND PHOTODYNAMIC INACTIVATION IN AN *IN VIVO* MODEL OF *S. AUREUS* INFECTION**

Roberto Tomás[1], Gabriela Di Venosa[1], Fernanda Buzzola[2], Adriana Casas[1], Leandro Mamone[1].
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Photodynamic Inactivation (PDI) combines a photosensitizer compound with visible light and molecular oxygen, to generate reactive species and kill microorganisms. 5-aminolevulinic acid (ALA) is a precursor in the biosynthesis of photosensitizing porphyrins.
Near-infrared therapy (NIRT) uses infrared light to deliver heat into tissues. NIRT can inactivate microorganisms and promote healing.
The aim of this work was to employ a combination of NIRT and ALA-PDI (visible light irradiation after topical ALA treatment) to reduce the progression of wounds caused by *Staphylococcus aureus* infection, in an *in vivo* model in mice. CF1 mice were injected subcutaneously with a suspension of *S. aureus* RN6390. After 48 h, 20 mg/ml ALA solution was applied to the skin. NIRT was performed with a 980 nm laser (96 J/cm^2). Porphyrins produced from ALA, and their localization, were determined by fluorescence spectroscopy and microscopy. The PDI was performed employing a 635 nm laser device (144 J/cm^2). The effect of light treatments and untreated controls was determined by measuring the area of the wound caused by infection during four weeks after treatments. Bacterial load at the infection site was measured by counting CFUs from skin homogenates. Wounds treated with ALA-PDI reduced area sooner than the untreated control. Differences between these two groups were significant every day after irradiation ($p<0.05$). Furthermore, the time required for complete wound closure in the ALA-PDI group was significantly less ($p<0.01$) than in the light and untreated controls (14 vs 21 and 27 days respectively). There was no difference in wound closure time when PDI was combined with NIRT, despite the results indicating that NIR treatment increases porphyrin levels at the site of infection. No statistically significant differences were detected in the bacterial load at the infection site between any of the treatments. Our results suggest that PDI is a promising option to treat superficial infections.

174. 265. **NOVEL COMPETITIVE ENZYME-LINKED IMMUNOSORBENT ASSAY FOR THE DETECTION OF THE HIGHRISK HUMAN PAPILLOMAVIRUS 18 E6 ONCOPROTEIN**

Natalia Estefania Contreras[1, 2], Julieta Suyay Roldán[1, 2], Daniela Susana Castillo[1, 2].
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[2]Escuela de Bio y Nanotecnologías (EByN), Universidad Nacional de San Martín (UNSAM), San Martín, Buenos Aires, Argentina

Cervical cancer represents a global concern with 604,000 new cases and 342,000 deaths reported annually, with the vast majority diagnosed in low income countries. Despite high-risk Human Papillomavirus (HR HPV)-induced cervical cancer has become highly preventable through prophylactic vaccines, screening programs are critical in the control of cervical carcinogenesis in populations with limited access to vaccination and in older generations of women who have already been exposed to HR HPV infection. In this context, the E6 oncoprotein from HR HPV types arises as a promising diagnostic marker for its overexpression in transformed HPV positive cancer cells. For this reason, the aim of this study consisted of obtaining monoclonal antibodies (mAbs) against the E6 oncoprotein of one of the most prevalent HR HPV types worldwide, HPV18, in order to develop a highly specific and sensitive indirect competitive ELISA (icELISA). We selected the 7D2 hybridoma clone, which enabled the development of a sensitive icELISA to detect and quantify small amounts (226 ng/ml) of E6 disease marker. To validate our icELISA, we performed spike-and-recovery tests in C-33 A HPV-negative cervical cancer cell lysates spiked with three concentrations of HPV18 E6 recombinant oncoprotein. The average recoveries were between the ideal range from 80 to 120%. Furthermore, we carried out linearity-of-dilution assays with cells extracts from HEK293T cells that stably express HPV18 E6. Results showed an average concentration of 4.5 ng/ml of HPV18 E6 oncoprotein per 1000 cells. Finally, we tested cells extracts of HPV18-positive cervical cancer-derived HeLa cell line, which gave high signal (632.5 ng/ml). In conclusion, the present study establishes a valid, sensitive, reliable and reproducible 7D2-based icELISA that constitutes a promising bioanalytical method for the early detection and quantification of HPV18 E6 oncoprotein in cervical swab samples and cancer prevention.

175. 363. **MICROVESICLES CARRYING SHIGA TOXIN TYPE 2 (MVS-STX2) AS A NEW CLINICAL BIOMARKER FOR THE RAPID DIAGNOSIS OF PATIENTS AT RISK OF DEVELOPING HEMOLYTIC UREMIC SYNDROME (HUS)**

Fernando Gómez[1,2], Flavia Sacerdoti[1,2], Daniel Girón Reyes[1,2], Carla Pascuale[3], Tomás Lombardo[4], Roxane Maria Fontes Piazza[5], Laura Alconcher[6], María Marta Amaral[1,2].
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In Argentina, Hemolytic Uremic Syndrome (HUS) caused by Shiga