







COMITÉ DE REDACCIÓN

Pablo J. Azurmendi Instituto de Investigaciones Médicas A. Lanari, UBA, Argentina Damasia Becú Villalobos Instituto de Biología y Medicina Experimental-CONICET, Buenos Aires, Argentina José H. Časabé Instituto de Cardiología y Cirugía Cardiovascular, Hospital Universitario Fundación Favaloro, Buenos Aires, Argentina Eduardo L. De Vito Instituto de Investigaciones Médicas A. Lanari, UBA, Argentina **Isabel Narvaiz Kantor** Organización Panamericana de la Salud (OPS/OMS) (ret.) Argentina Basilio A. Kotsias Instituto de Investigaciones Médicas A. Lanari, UBA, Argentina **Gustavo Kusminsky** Hospital Universitario Austral, Buenos Aires, Argentina Isabel A. Lüthy Instituto de Biología y Medicina Experimental (IBYME), Buenos

Aires, Argentina Daniel A. Manigot Hospital San Juan de Dios, Buenos Aires, Argentina Jorge A. Manni Instituto de Investigaciones Médicas A. Lanari, UBA, Argentina Rodolfo S. Martin Facultad de Ciencias Biomédicas y Hospital Universitario Austral, Buenos Aires, Argentina Guillermo D. Mazzolini Instituto de Investigaciones en Medicina Traslacional-CONICET, Hospital Universitario Austral, Buenos Aires, Argentina Rodolfo C. Puche Facultad de Ciencias Médicas, Universidad Nacional de Rosario, Santa Fe, Argentina Viviana Ritacco Instituto Nacional de Enfermedades Infecciosas ANLIS-CONICET, Buenos Aires, Argentina Guillermo B. Semeniuk

Instituto de Investigaciones Médicas A. Lanari, UBA, Argentina

MIEMBROS EMÉRITOS

Héctor O. Alonso Instituto Caardiovascular Rosario, Santa Fe, Argentina Guillermo Jaim Etcheverry Facultad de Medicina, UBA, Argentina María Marta de Elizalde de Bracco IMEX-CONICET-Academia Nacional de Medicina, Buenos Aires,

Argentina Christiane Dosne Pasqualini Academia Nacional de Medicina, Buenos Aires, Argentina

La Tapa (Ver pág. 4) Atardecer en la tarde Antonella Ricagni

MEDICINA (Buenos Aires) - Revista bimestral - ISSN 0025-7680 (Impresa) - ISSN 1669-9106 (En línea)

REVISTA BIMESTRAL Registro de la Propiedad Intelectual Nº 02683675 Personería Jurídica Nº C-7497 Publicación de la Fundación Revista Medicina (Buenos Aires) Propietario de la publicación: Fundación Revista Medicina Queda hecho el depósito que establece la Ley 11723

Publicada con el apoyo del Ministerio de Ciencia, Tecnología e Innovación Productiva. MEDICINA no tiene propósitos comerciales. El objeto de su creación ha sido propender al adelanto de la medicina argentina.

Los beneficios que pudieran obtenerse serán aplicados exclusivamente a este fin.

Aparece en MEDLINE (PubMed), ISI-THOMSON REUTERS (Journal Citation Report, Current Contents, Biological Abstracts, Biosis, Life Sciences), CABI (Global Health), ELSEVIER (Scopus, Embase, Excerpta Medica), SciELO, LATINDEX, BVS (Biblioteca Virtual en Salud), DOAJ, Google Scholar y Google Books.

Incluida en el Núcleo Básico de Revistas Científicas Argentinas del CONICET.

Directores Responsables:

Basilio A. Kotsias, Eduardo L. De Vito, Isabel Narvaiz Kantor, Guillermo B. Semeniuk

Secretaría de Redacción: Ethel Di Vita, Instituto de Investigaciones Médicas Alfredo Lanari, Combatientes de Malvinas 3150,

1427 Buenos Aires, Argentina

Tel. 5287-3827 Int. 73919 y 4523-6619 e-mail: revmedbuenosaires@gmail.com – http://: www.medicinabuenosaires.com

Vol. 79, Supl. IV, Noviembre 2019



REUNIÓN ANUAL DE SOCIEDADES DE BIOCIENCIA 2019

LXIV Reunión Anual de la Sociedad Argentina de Investigación Clínica (SAIC)

LI Reunión Anual de la Asociación Argentina de Farmacología Experimental (SAFE)

> XXI Reunión Anual de la Sociedad Argentina de Biología (SAB)

XXXI Reunión Anual de la Sociedad Argentina de Protozoología (SAP)

IX Reunión Anual de la Asociación Argentina de Nanomedicinas (NANOMED-ar)

VI Reunión Científica Regional de la Asociación Argentina de Ciencia y Tecnología de Animales de Laboratorio (AACyTAL)

> con la participación de The Histochemical Society

13 - 16 de noviembre de 2019 Hotel 13 de Julio - Mar del Plata

EDITORES RESPONSABLES

Dra. Mónica Costas Dra. Gabriela Marino Dr. Pablo Azurmendi



ANNUAL MEETING OF BIOSCIENCE SOCIETIES 2019

LXIV Annual Meeting of Sociedad Argentina de Investigación Clínica (SAIC)

LI Annual Meeting of Asociación Argentina de Farmacología Experimental (SAFE)

> XXI Annual Meeting of Sociedad Argentina de Biología (SAB)

XXXI Annual Meeting of Sociedad Argentina de Protozoología (SAP)

IX Annual Meeting of Asociación Argentina de Nanomedicinas (NANOMED-ar)

VI Regional Scientific Meeting of Asociación Argentina de Ciencia y Tecnología de Animales de Laboratorio (AACyTAL)

> with the participation of The Histochemical Society

November 13th – 16th, 2019 Hotel 13 de Julio - Mar del Plata

CHIEF EDITORS

Dra. Mónica Costas Dra. Gabriela Marino Dr. Pablo Azurmendi **Piuque M. RODRIGUEZ** (1) | Berta VERA(1) | Maria Celeste MUNTANER(2) | María Vanesa LOSILLA(2) | Paola Mariana ONDARZA(3) | Natalia Lorena GUIÑAZÚ ALANIZ(1)

CITAAC - CONICET - UNIVERSIDAD NACIONAL DEL COMAHUE (1); CLÍNICA SAN LUCAS MATERNIDAD (2); LABORATORIO DE ECOTOXICOLOGÍA Y CONTAMINACION AMBIENTAL, IIMYC -UNMDP - CONICET (3)

Abstract/Resumen: Among modern non-persistent pesticides, the organophosphates (OPs) are the most commonly used worldwide. In Argentina, pesticides as the OP chlorpyrifos (CP), the fungicide chlorothalonil (CT) and the herbicide trifluralin (TF) are utilized. Previous studies have reported that women and children living close to agricultural areas at the Alto Valle of Río Negro and Neuquén region are at risk of pesticide exposure. The aim of the present work was to determine with an interdisciplinary approach, levels of current use pesticides and carboxylesterase (CES) activity in human placenta. Moreover, the association between pesticide exposure and biomarker responses was also considered. Healthy pregnant women were invited to participate in this study (n= 36). Placenta samples from women residing in Neuquén city (control group-CG, n= 21) and in rural areas (rural group-RG, n= 15), were collected during 2018-2019. Demographic characteristics of the studied groups and morphometric parameters of newborns and placenta were collected. Written informed consent was obtained and the study was approved by the local ethical committee (CAIBSH). The levels of CP, TF, and CT were determined by gas chromatography. The biomarker of OP exposure, CES activity was determined by the Morgan method. Preliminary results indicated non-significant differences in the women sociodemographic characteristics and the morphometric parameters of newborns and placenta among groups. A significant CES activity reduction was observed in RG samples collected during springsummer respect to CG (29 %, p= 0.022), coincident with the highest pesticide rate for agricultural use. Among pesticides, CP presented the highest concentrations followed in decrease order by CT > TF. These results clearly indicate that women are environmentally in contact with different pesticides. Further work is needed in order to increase the number of participants and the significance of CES activity modifications as well as pesticide levels.

0769 - ALTERNATIVE TARGETS OF PESTICIDE TOXICITY: EFFECT OF CHLORPYRIFOS IN TLR EXPRESSION IN HUMAN TROPHOBLASTS

Diego Sebastian GOMEZ | Natalia GUIÑAZÚ

CITAAC-CONICET-UNIVERSIDAD NACIONAL DEL COMAHUE; FACIAS-UNIVERSIDAD NACIONAL DEL COMAHUE

Abstract/Resumen: Organophosphate pesticides (OPs) have been widely used and are the most commonly used insecticides worldwide. OPs insecticides develop different toxicity mechanisms, classic and non-classic ones. Among these later, it has been proposed that OPs may alter the cellular inflammatory response. Trophoblasts are sensitive to danger signals from infections and tissue damage. Toll-like receptors (TLRs) are essential components of the innate response and are expressed in trophoblasts. The objective of this work was to evaluate the impact of OP in vitro exposure, at environmental relevant concentrations, in TLR2 and TLR4 receptors expression in first trimester trophoblast. The first trimester trophoblast cell line HTR-8/SVneo was incubated with the OP chlorpyrifos -CP- (0-100 μ M) for 24 h. LPS condition was used as positive control for TLR4. TLR2 and TLR4 transcript expression levels were studied by qPCR. In addition, protein levels of TLR-4 after exposure were evaluated by western blot in 10% SDS-PAGE. B-actin was used as loading control. Statistical differences were analyzed by Dunnet's pos hoc of three independent experiments. Preliminary results indicated that CP alters the expression of both TLR-2 and TLR-4. The higher CP concentrations (10 and 100 $\mu M)$ significantly increased TLR2, 8 fold compared to control treatment. Similarly, CP (10 and 100 $\mu M)$ augmented TLR4 transcript 3 fold respect to controls. TLR-4 protein levels did not show significant differences compared to control as a result of CP treatment. Interestingly co-exposure of CP-LPS, modulate TLR4 response to LPS. The increment in TLRs transcript indicates the possible impact clorpyriphos in the innate immune response in first trimester trophoblast. Further studies are needed to verify modifications in TLR protein expression at longer incubation than the one analyzed. In order to understand this scenario, cytokine balance as well as other components of cell inflammatory response should be studied.

0811 - NEONATAL EXPOSURE TO A GLYPHOSATE-BASED HERBICIDE ALTERS CELL PROLIFERATION IN THE UTERUS OF EWE LAMBS.

Ramiro ALARCÓN | Paola I INGARAMO | María Mercedes MILESI | Gisela Haydee DIOGUARDI | Oscar Edgardo RIVERA | Mónica MUÑOZ-DE-TORO | Enrique Hugo LUQUE

INSTITUTO DE SALUD Y AMBIENTE DEL LITORAL (ISAL, UNL-CONICET),

Abstract/Resumen: The increasing use of glyphosate-based herbicides (GBHs) raised concern about its effects on animal and human health. Recently, we reported that postnatal exposure of ewe lambs to a low dose of GBH decreased the uterine cell proliferation, regardless the oral or subcutaneous (sc) administration route. Here, we investigate the molecular pathways related to uterine cell proliferation affected by a postnatal GBH exposure. Frisone ewe lambs were sc exposed from PND1 to PND14 to vehicle (control) or a low dose of a GBH (glyphosate at 2 mg/Kg/day). At postnatal day 45 (PND45), uterine horns were collected for paraffin-embedding or stored at -80°C until mRNA extraction. Expression of Ki67 (as cell proliferation marker), p27 and proteins involved in uterine development (ERa, PR, Wnt5a, Wnt7a, B-catenin, Hoxa10 and Foxa2) were evaluated by immunohistochemistry. Gene expression of insulin-like growth factors (IGF-1, IGF-2), its receptor (IGF-1R) and the binding protein (IGFBP-3), also related to uterine development, were assessed by RT-PCR. Cell proliferation decreased while p27 expression increased in all uterine compartments: luminal (LE) and glandular (GE) epithelia, subepithelial stroma (SS) and myometrium. The mRNA expression of IGFBP-3 was also increased in GBH-exposed lambs. In addition, lower ERa expression was observed in LE, GE and SS; while PR expression was lower in LE, and higher in GE and SS vs control. Moreover, GBH exposure decreased the expression of Wnt5a in GE and Wnt7a in SS; whereas ß-catenin expression was lower in LE and GE. In GBH-exposed lambs a decreased Hoxa10 and Foxa2 expression in SS and GE, respectively, was also detected. To conclude, postnatal exposure to an environmental relevant dose of GBH decrease the cell proliferation in prepubertal sheep uterus by disrupting the expression of molecules responsible of uterine development. Our results suggest that GBH exposure could compromise reproductive performance in livestock animals.

0813 - METABOLIC STABILITY OF GLIFOSATE IN RUMINAL CONTENT FROM CATTLE: PARTITION BETWEEN PARTICULATE AND FLUID DIGESTIVE MATERIAL

Karen Elizabeth LARSEN | Vanina PÉREZ | Adrian LIFSCHITZ | Guillermo VIRKEL

CIVETAN (CONICET-CICPBA-UNCPBA), FACULTAD DE CIENCIAS VETERINARIAS, UNCPBA, TANDIL

Abstract/Resumen: Glyphosate (GLP) is one of the most commonly pesticides delivered to the environment. Farm animals could be exposed to both GLP and aminomethylphosphonic acid (AMPA, the major GLP metabolite) present in surface and groundwater, but also in foodstuffs used for preparation of concentrate feeds. For instance, detectable levels of GLP were

observed in the urine of dairy cows chronically exposed to the herbicide present in their feed. In cattle, the rumen plays a central role in the pre-systemic metabolism of xenobiotics, thus protecting the organism against potentially harmful chemical compounds. This work evaluated the chemical stability of GLP in the ruminal environment. Ruminal contents from 3 steers were collected in a local abattoir. Samples were roughly filtered, kept at 37°C and transported to the laboratory. Aliquots of both whole ruminal content and fluid phase were incubated (3-6 h) in anaerobiosis with GLP (12.5 µg/mL). Metabolic viability of ruminal contents was assessed by the measurement of the SOreduction of the anthelmintic albendazole sulfoxide (ABZSO). These assays were carried out in the absence (controls) and in presence of GLP. Incubations of boiled (inactive) ruminal content and fluid were used as controls. Samples were analysed by HLPC with fluorescence detection. Incubated ruminal contents were subsequentially centrifuged for determination of the amounts of the herbicide in the fluid phase and in the particulate material. GLP was not metabolised neither in the ruminal content nor in the fluid phase. The percentage of GLP associated to the particulate material ranged between 5.7 (3 h) and 11.2 (6 h). GLP did not affect the SO-reduction of ABZSO. These results may indicate that the ruminal environment is not involved in the presystemic metabolism of GLP. As GLP is a hydrophilic xenobiotic, the highest proportion of the herbicide is solubilised in the fluid phase of the ruminal content which may influence in its rate of absorption after ingestion.

0815 - ROLE OF THYROID HORMONES, TGF BETA; AND ON IN ARTERIAL HYPERTENSION GENERATED BY ENVIRONMENTAL TOXINS

Giselle ROMERO CAIMI(1) | Cristopher GUTIERREZ(1) | Zahira DEZA(2) | Patricia BONAZZOLA(3) | Florencia CHIAPPINI(1) | María Del Rocío CASTILLA LOZANO(3) | **Laura ÁLVAREZ** (1)

FACULTAD DE MEDICINA (1); FACULTAD DE CIENCIAS EXACTAS, QUÍMICAS Y NATURALES, UNAM, DEPARTAMENTO DE MICROBIOLOGIA (CONICET) (2); INSTITUTO ALBERTO C TAQUINI DE INVESTIGACIONES EN MEDICINA TRASLACIONAL (FMED-UBA) (3)

Abstract/Resumen: Hypertension is one of the main pathologies associated with environmental pollution. Among the environmental pollutants is hexachlorobenzene (HCB). We demonstrate that HCB increases blood pressure (BP) and alters morphology and vascular functionality (VF) in vivo. $TGF-\beta1$; and RE-alfa; are involved in these effects. Since the effects on the VF were endothelium dependent, in this work we deepen the study of the mechanism of action of HCB on VF in the EA-hy926 endothelial line, grown in DMEM, 10 % FBS, at 37 °C treated with HCB (0.05, 0.05 and 5 $\mu M)$ at different times (18 and 24 hours). We analyze: a- Molecules involved in contractility and BP, TGF- β and RE-alfa [Western blot (W), RT-PCR]. b- Levels of eNOs and nitrites (W, Greiss). c- Role of TGF- β , in the expression of REalfa; (TGF-R RII inhibitor, SB431542). d- Rol of thyroid hormones (TH) in the expression of TGF- β and RE-alfa [serum depleted TH, exogenous T3 (10⁻⁷ M)], since HCB is an endocrine disruptor and induces hypothyroxinemia, and that TH regulates the expression of these parameters. a- TGF- β ; (protein) increased 24 %, (p<0.05), HCB (0.05) and 38, 40 % (p<0.01), HCB (0.05 and 5 μ M), its mRNA 28 and 36 %, (p<0.01), and HCB (0.05 µM). RE-alfa; decreased 28 and 36% (p<0.01), HCB (0.05 and 5 μ M) (18, 24 h). b- eNOs decreased 25 % (p<0.05), HCB (µM), and nitrites 20 and 38% (p<0.05, p<0.01), HCB (0.05 and 5 μ M) (24 h). c- Inhibition of RII TGF- β ; increased REalfa, HCB (5 μ M) (24 h). d- The TGF- β increase in TH depleted cells dose-dependent, contrary to RE-alfa. HCB and T3 administration normalized the effect of HCB on both parameters (24 h). HCB alters hormonal homeostasis, deregulates molecules involved in VF via TGF- β and NO. TGF- β and the decrease in NO decreased, in a paracrine manner, could be responsible for the effects observed in vivo in vascular muscle cells of animals treated with HCB, increasing BP.

0820 - SOY BASED DIET MODIFIES CADMIUM-INDUCED LIPID METABOLISM ALTERATIONS IN RAT CEREBELLUM.

Glenda Daniela MARTIN MOLINERO (1) | Gabriel BOLDRINI(1) | Maria Cecilia MICHEL(2) | Silvina Monica ALVAREZ(1)

INSTITUTO MULTIDISCIPLINARIO DE INVESTIGACIONES BIOLOGICAS (IMIBIO-SL) (1); UNIVERSIDAD NACIONAL DE SAN LUIS (2)

Abstract/Resumen: Cadmium is a toxic agent that is also an environmental contaminant. We studied its effects and the protective role of a vegetarian versus animal protein diet in cerebellum. The lipid profile, lipoperoxidation and the expression of lipid metabolism related enzymes were analized. Four lots of female Wistar rats were used: 2 lots received casein (Cas) and 2 lots soybean (So) as protein source. Within each group, 1 lot received regular water (control-Co) and the other, 15 ppm of Cd in the drinking water for 60 days. The animal weight was weekly measured. Cerebellum homogenates were used for TBA assay, and the levels of lipid peroxidation products - mainly malondialdehyde (MDA) were determined spectrophotometrically as TBARS. Lipids were extracted and total cholesterol (TC), triglycerides (TG) and phospholipids (PL) were determined. Total RNA was isolated with Trizol and cDNA was obtained. Cytidylyltransferase (CT), hidroxymethylglutaryl CoA reductase (HMGCoAR), fatty acid synthetase (FAS) and acetyl CoA catboxylase (ACC) were determined by PCR. S28 was used as an internal control. Cadmium concentration was determined with ICP-MS. Animals weight showed no differences among the groups. Cadmium concentrations showed an increase in CasCd vs. CasCo (p<0.001) with no differences among Soy groups. Total lipids content showed a trend to decrease in Soy groups compared to Casein groups, being only significant in SoCd vs. CasCd (p<0.01). TC increased in both intoxicated groups (p<0.05) when compared to their controls. TG increased in CasCd vs. CasCo (p<0.05) and also augmented in SoCo vs. CasCo (p<0.05); without differences between soy groups. FL decreased in SoCd vs. CasCd (p<0.01) and increased in CasCd vs. CasCo (p<0.01). It also augmented in SoCo vs. CasCo (p<0.05). TBARS showed a significant increase (p<0.01) in Cd groups, and also augmented in SoCo vs. CasCo (p<0.05). CT expression increased in CasCd (p<0.05) and in SoCo (p<0.01) vs. CasCo; it decreased in SoCd vs. SoCo (p<0.05). HMGCoAR mRNA levels augmented in both Cd groups (p<0.05). FAS expression diminished in both Cd groups vs. their controls (p<0.05) and it augmented in SoCo vs. CasCo (p<0.05). ACC showed no differences. This shows that TG and PL are altered by Cd, and Soy might confer protection in cerebellum against the metal.

0822 - SYSTEMIC TOXICITY BY NERIUM OLEANDER IN EXPERIMENTATION ANIMALS

Angelica Maria CABRERA BENITEZ | Daiana ZADRAVEC | Sandra Griselda CANTEROS | Maria Elena PISTAN | Norma MUSSART | Ana María TORRES | Gladys Pamela TEIBLER

UNIVERSIDAD NACIONAL DEL NORDESTE

Abstract/Resumen: Nerium oleander (NO), belongs to the Apocynacea family, known as adelfa and flower laurel, that is frequently grown in gardens and public areas and as all parts of the plant contain numerous toxic compounds. N. oleander has linear and leathery leaves that come in various colours, from dark green to grey green with distinct light yellowish veins. Its flowers are fragrant, funnel-shaped and arranged in clusters at the tip of twigs, with white to pink to deep red colours. The fruit is a narrow pod containing many silky-haired seeds. This plant is native to Mediterranean regions of Africa and Europe. Its toxicity is attributed to Cardiac glycosides, oleandrin and neriin. The aim of this work was to determine the toxicity of an alcoholic extract of NO for the tissues. In this context, dried and ground leaves