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"DETERMINANTS OF ALCOHOLISM: BRIDGING THE GAP BETWEEN EPIDEMIOLOGICAL AND BASIC RESEARCH"

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mice perinatally exposed to EtOH. Primiparous female CD1 mice were exposed to EtOH 6% v/v for four weeks previous to mating. Pregnant mice drank EtOH 6% v/v throughout pregnancy and during lactation. This model of maternal alcoholism rendered no significant differences between EtOH and control mice in terms of weight gain or the number of offspring. Mothers yielded a blood ethanol concentration (BEC) of 73.29±8.69 mg/dl at the end of lactation, while pups yielded a BEC of 101.56±5.21 mg/dl at P21, which shows increasing BEC in pups as compared to mothers. At P21, male pups were separated, exposed to standard food and water *ad libitum* until adulthood and never exposed to EtOH for the rest of their lives. At P0, P21 and P80, pups were perfused with formaldehyde and brains were used for immunofluorescence studies. We analyzed the morphological evolution of the hippocampus through a mathematical approach measuring circularity, roundness, thickness and cellular composition of the dentate gyrus, a hippocampal neurogenic niche. While brains exposed to EtOH showed higher circularity and roundness than controls, the thickness of the granular layer was lower than controls and persisted until adulthood when an astrocytic reaction was present, even though animals were not exposed to EtOH after weaning.

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ALCOHOL USE DURING PREGNANCY: A PREVENTION PROGRAM BASED ON COMMUNITY-HEALTH VOLUNTEERS EXPERIENCES

Castelló, Stefanía Anabel[1], Villarreal, Ruth Noelia[1], Rognone, Ana[2], Abate, Paula[1], & Molina, Juan Carlos[3]

[1]Instituto de Investigaciones Psicológicas IIPsi-CONICET-UNC. Facultad de Psicología, Universidad Nacional de Córdoba, Argentina.
[2]Hospital Misericordia, Córdoba, Argentina.
[3]Instituto de Investigación Médica M. y M. Ferreyra INIMEC-CONICET-UNC, Córdoba, Argentina.
scastello@unc.edu.ar

Epidemiological data from several countries reveal that alcohol use during pregnancy is still highly common between women. This situation demands more effective prevention strategies, due to the great risks for the fetus development related to alcohol consumption. In Argentina this situation becomes more complex due to issues associated to accessibility to the public healthcare system. The main goal of the present work was to design a prevention strategy for alcohol use during pregnancy and breastfeeding periods, which were community-based and directed to women users of the public healthcare system, living in marginalized populations of Córdoba (Argentina). In order to acquire a deepen knowledge about the real needs of women from our communities, we performed a series of collaborative, interactive workshops with community-health volunteers. The topics of these meetings were alcohol-use related effects during pregnancy and breastfeeding periods, including biological and epidemiological information. We also discussed on popular beliefs about alcohol use during these periods that are commonly heard and routine practiced in our communities. More importantly, we discussed about women sexual and reproductive/non-reproductive health as a way of promoting healthy practices during pregnancy and breastfeeding. The accessibility to the healthcare system and the full exercise of sexual and reproductive/non reproductive rights were considered the main barriers to guarantee healthy practices during pregnancy and breastfeeding periods in women from our communities. According to the discussed content on these workshops series, and with the collaboration of the community-health volunteers, we performed a divulgation notebook which includes: information about risks related to alcohol use during pregnancy and breastfeeding periods; contact information about community-directed activities carried out

by the main public healthcare institutions; and information about sexual and reproductive/non-reproductive rights of women in accordance to our national current laws. We conclude that an effective prevention strategy for alcohol use during pregnancy and breastfeeding should be based on a more complex, integrative view about women's health, including community-based interventions and sexual education contents. Grants: SEDRONAR, convenio Fundación Abriendo Corazones Resol-2018-496-APN-SEDRONAR.

SENSITIZATION TO ETHANOL'S DISRUPTIVE EFFECTS UPON EARLY BREATHING PLASTICITY ASSOCIATED WITH HYPOXIA AND HYPERCAPNIA.

Anunziata, Florencia, Macchione, Ana Fabiola, Angulo Alcalde, Asier, Trujillo, María Verónica, Wille-Bille, Aranza, Amigone, José Luis, & Molina, Juan Carlos.

[1] Instituto de Investigaciones Médicas Mercedes y Martín Ferreyra (INIMEC-CONICET-UNC), Córdoba, Argentina
[2] Facultad de Psicología - Universidad Nacional de Córdoba, Argentina.
[3] Instituto de Investigaciones Psicológicas (IIPSI-CONICET-UNC), Córdoba Argentina.
Laboratorio de Bioquímica Clínica, Hospital Privado de Córdoba Argentina
florenciaanunziata@gmail.com

Ethanol (EtOH) consumption during pregnancy and lactation represents a risk factor related with the Sudden Infant Death Syndrome (SIDS). This phenomenon has promoted research linking prenatal EtOH effects on the respiratory system during early ontogeny. It should also be noted that prolonged episodes of neonatal respiratory depression represent a risk factor in terms of hypoxic-ischemic effects with negative consequences on brain development. In a first study during postnatal day (PD) 9 we analyzed the impact of different doses of EtOH (0.0, 0.75, 1.37 or 2.0 g/kg) upon the respiratory response and the potential psychomotor effects in pup rats pre-exposed or not to 2.0 g/kg of EtOH during PDs 3-7. At PD 9 animals were also subjected to sequential air conditions defined as initial normoxia, hypoxia and recovery normoxia. In a second study we analyzed the blood of animals only exposed to 0.0 or 2.0g/kg of EtOH during PDs 3-9 (not subjected to a hypoxic event). The aim was to examine if mere intoxication with a moderate dose of EtOH is capable of modifying blood metabolic patterns associated with hypoxia or hypercapnia. In the first study during PDs 3-7 EtOH exerted a depressant effect upon breathing frequencies. These animals also showed a progressive sensitization effect relative to the depressant effects of the drug and lesser levels of apneas. At PD 9 dose dependent respiratory depressions were observed when pups were challenged with a hypoxic event. Independently from prior experience with EtOH, drug treatment at PD 9 significantly disrupted respiratory frequencies particularly during the hypoxic and the recovery normoxia phases. Respiratory disorders triggered by these air conditions have been implicated in the pathophysiology of SIDS. These results show that breathing plasticity is disrupted during a critical stage where respiratory alterations may lead to hypoxia-associated syndromes that endanger brain development. In terms of psychomotor activity, animals exposed to 2.0 g/kg of EtOH at PD 9 showed heightened duration and frequency of grooming. In the second study animals exposed at least one time to EtOH exhibited lower pH and higher CO_2 than animals that were never exposed to EtOH. This results suggest metabolic acidosis probably due to EtOH-related hypercapnia during a vulnerable stage in development relative to SIDS.