1st INTERNATIONAL SYMPOSIUM of DOHaD and Pandemic: LESSONS FROM COVID-19
10, 11, 12 of May 2023
Maringá - PR / Brazil
State University of Maringá

1º SIMPÓSIO INTERNACIONAL de DOHaD e Pandemia: LIÇÕES DO COVID-19
10, 11 e 12 de Maio 2023
Maringá - PR / Brasil
Universidade Estadual de Maringá

1º SIMPOSIO INTERNACIONAL de DOHaD y Pandemia: LECCIONES DEL COVID-19
10, 11 y 12 de Mayo 2023
Maringá - PR / Brasil
Universidad Estadual de Maringá

EARLY PPARα ACTIVATION PROTECT AGAINST HEPATIC MICROSTEATOSIS INDUCED BY POST-NATAL OVERFEEDING

Ana L. M. Assakawa[1], Lucas P. J. Saavedra, Scarlett Raposo, Naiara Lucredi, Maria N. C. Peres, Silvano Piovan, Gessica Gonçalves, Letícia Barbosa, Jurandir Comar, Douglas L. Almeida, Paulo C. F. Mathias
[1]analeticiamanso@gmail.com, UEM, 0009-0007-6084-7720

Post-natal overfeeding leads to development of obesity and metabolic dysfunction. PPARα activation improves steatosis and metabolic dysfunction associated with obesity. Thus, we have hypothesized that PPARα would prevent the metabolic disorders and obesity caused by litter reduction. Wistar male offspring rats were divided into normal litter (NL - 9 pups) and small litter (SL - 3 pups) and were daily treated with an PPARα agonist, fenofibrate, from post-natal day (PN) 1 until weaning (PN21), with either, fenofibrate (F - 12.5mg/kg) or vehicle (V). Forming the following groups: NL-V, NL-F, SL-V, SL-F. At PN120 animals were euthanized and histological evaluation of samples from liver, visceral (VAT), subcutaneous (SAT) and brown (BAT) adipose tissue were performed. Fenofibrate was able to prevent the development of microsteatosis in the liver caused by postnatal overfeeding. In regard to VAT, there was no difference in the mean adipocyte area, however in distribution analyzes it was observed higher frequency of larger adipocytes in SL groups, and no difference was observed in SAT. SL-V animals had increased lipid area in BAT, which was reduced in SL-F. Increased PPARα activation induced by an agonist during lactation improved some histopathological abnormalities induced by postnatal overfeeding. This was proven by the decrease in microsteatosis in the liver and improvement in VAT and BAT morphology, thus implying a better metabolic health.

Keywords: PPARα, Small Litter, Fenofibrate.
Funding: CNPq, CAPES and INSPAM/JBS