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

MATERNAL PROTEIN MALNUTRITION DURING LACTATION PREDISPOSES TO A METABOLIC SYNDROME PHENOTYPE IN MALE WISTAR RATS

Willian do Nascimento de Souza Rodrigues[1], Maria Natalia Chimirri Peres, Scarlett Rodrigues Raposo, Maryana Debossan Fernandes, Marcos Vinícius Martins, Leticia Ferreira Barbosa, Filipe Lima dos Santos, Lucas Paulo Jacinto Saavedra, Veridiana Mota Moreira, Paulo Cezar de Freitas Mathias

[1]willian_rodrigues7@hotmail.com, PBC/UEM, 0000-0001-6576-6929

Maternal nutritional insults during lactation can modulate the offspring phenotype associated with the risk of non-communicable diseases at different stages of ontogenetic development. The aim of this research was to analyze biometric and biochemical parameters of male Wistar rats, born to dams fed a low-protein diet in the first two-thirds of lactation. Therefore, the mothers received *ad libitum* a normal (NP, 23%) or low-protein (LP, 4%) diet, originating two experimental groups that were evaluated at 14 days old (NP-14 and LP-14). The results showed that the LP-14 offspring male rats had lower body weight ($p<0.0001$), reduced liver ($p<0.0001$) and higher brown fat deposits ($p<0.0001$), compared to the equivalent control. They also exhibited hyperglycemia ($p<0.05$), hypercholesterolemia ($p<0.0001$), and increased serum β-hydroxybutyrate ($p<0.0001$), contrasting with reduced triglycerides ($p<0.05$) levels. We conclude that maternal exposure to a low-protein diet during lactation was able to program 14-day-old male neonates to develop a metabolic syndrome phenotype, probably due to restriction of body and visceral growth in these animals.

Keywords: Maternal Protein Malnutrition, Lactation, DOHaD

Funding: CAPES, CNPQ, INSPAM/JBS