Programación paterna de alteraciones metabólicas en la placenta

Paternal programming of metabolic alterations in the placenta

Daiana Fornes (Ph.D.)[1 2], M. Florencia Heinecke (M.Sc.)[1 2], Alicia Jawerbaum (Ph.D.)[1 2], Evangelina Capobianco (Ph.D.)[1 2].
[1] CONICET-UBA, Center of pharmacological and botanical studies (CEFYBO) Buenos Aires, Argentina.
[2] University of Buenos Aires (UBA), School of Medicine, Buenos Aires, Argentina.

The contribution of paternal diabetes to long-term offspring´s metabolic health is little known[1].
The aim was to evaluate the regulation of lipid metabolism in the placenta of male fetuses (F2) from healthy pregnant rats that were mated with male diabetic rats (F1).
Control (C) and type 2 diabetic male rats (D, diabetes obtained by intrauterine programming, glycemia 140-190 mg/dL)[1-3] were mated with control female rats. On day 21 of gestation, the pregnant and male rats were euthanized. The placentas, the fetuses and fetal and paternal plasma were obtained for further evaluation.
In the paternal and fetal plasma of D rats, the levels of triglycerides and cholesterol were increased ($p<0.05$ vs C). Fetal weight was increased in D group ($p<0.05$), and placental weight was similar in both groups. The levels of triglycerides, cholesterol and free fatty acids were increased ($p<0.05$ vs C) in the placenta of D group. The mRNA levels of *Pparalpha* and its co-activator *Pgc1alpha*, and the mRNA levels of *Fatp*1 and *Lipg* were increased in the placenta of D group ($p<0.05$ vs C).
Paternal diabetes programs alterations in the feto-placental lipid metabolism. The intergenerational transmission of these metabolic alterations may lead to adverse consequences to the adult offspring.

Keywords
Paternal programming
Diabetes
Placenta
Fetal
Lipids

References

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Conflict of interest

The authors have declared no conflicts of interest.