

Niccolo Giovannini
 Fondazione IRCCS Policlinico
 Mangiagalli
 Regina Elena Via Commenda 12
 20122 Milan
 Italy
 Email: niccolo.giovannini@unimi.it

Lipid profile in IUGR with/without preeclampsia

Alvino Gioia (Univ of Milan, Fondazione IRCCS Mangiagalli, Italy), Giovannini Niccolò* (Univ of Milan, Fondazione IRCCS Mangiagalli, Italy), Martinelli Anna (Univ of Milan, Fondazione IRCCS Mangiagalli, Italy), Cozzi Veronica (Univ of Milan, Fondazione IRCCS Mangiagalli, Italy), Radaelli Tatjana (Univ of Milan, Fondazione IRCCS Mangiagalli, Italy), Ortega Henar (Univ of San Pablo CEU, Madrid, Spain), Herrera Emilio (Univ of San Pablo CEU, Madrid, Spain), Cetin Irene (Univ of Milan, Fondazione IRCCS Mangiagalli).

Objective: to study lipid profile in pregnancy complicated by intrauterine growth restriction (IUGR) with and without preeclampsia compared with normal pregnancies.

Study design: we studied 42 normal pregnancies: 13 during the third trimester (control M) and 29 at the time of elective caesarean section (control CS). They were compared with 18 pregnancies complicated by IUGR and 7 pregnancies complicated both by IUGR and preeclampsia (IUGR-PE) at the time of caesarean section performed because of fetal compromise. Fatty acid profiles, expressed as percentage of total fatty acids in maternal plasma of IUGR were compared with time of pregnancy-matched control M mothers and fetal IUGR plasma with control CS. Data about nutritional intake of all women studied were also analyzed.

Results: In IUGR mothers we observed lower Linoleic Acid (LA), and higher Arachidonic Acid (AA), partly explained by higher AA dietary intake. We also observed higher levels of NEFA both in IUGR and in IUGR-PE mothers while triglyceride levels were increased in IUGR-PE mothers only.

In IUGR-PE fetuses LA and AA percentages were significantly decreased, while triglyceride and NEFA concentrations were significantly increased compared with normal and IUGR fetuses.

Conclusions: IUGR is associated with altered fatty acids profile which is not accounted by dietary changes. Moreover the differences observed in IUGR compared to IUGR with preeclampsia for triglycerides as well as for other lipids could be related to a difference in maternal phenotype.

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