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Poster Presentations

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The association between fatty acids and steroids gene expression in abdominal subcutaneous fat depot: A comparison between pregnant PCOS and non-PCOS pregnant women

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Background: It was reported that steroid-related gene expressions in the adipose tissue (AT) of women differ between women affected with polycystic ovary syndrome (PCOS) (case) and non-PCOS (control). Although association between PCOS in mother and offspring's health is a crucial issue, there are few studies focusing on effectiveness of AT profiles on steroids genes expression in pregnant women suffering from PCOS.

Objective: Our objectives were to assess association between fatty acid (FA) and genes related to steroids metabolism expression in abdominal subcutaneous AT of 12 PCOS (case) vs. 32 non-PCOS (control) age- and BMI-matched pregnant women.

Materials and Methods: Twelve pregnant women with PCOS (case) and thirty two non-PCOS pregnant women (control) (age- and BMI-matched) undergoing cesarean section were enrolled for the present study. Expressions of fifteen genes related to steriodogenesis in abdominal subcutaneous AT were investigated using quantitative real-time PCR. Fatty acids profiles assessed by gas chromatography. Linear regression was performed to determine the association of FA and gene expression in subcutaneous AT.

Results: Age and BMI were similar among two groups at delivery day. Current study showed that omega-3 fatty acids had the highest association with steroids gene expression rate ($r = 0.500$; $p < 0.05$).

Conclusion: It seems that fatty acids, both direct and by metabolites, can play a role in many diseases through extensive signaling pathways, specifically in exacerbating PCOS, although pregnancy can double the role of nutrition in exacerbating these effects.

Key words: *Polycystic ovary syndrome, Subcutaneous adipose tissue, Sex steroid, Fatty acids.*

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