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Obesity and periodontal diseases in pregnancy: inflammation and antioxidant levels in saliva

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Presenter: **Chiara Mandò**

Introduction: Obesity (OB) is associated with chronic mild inflammation and higher gestational risks. OB is also associated with oxidative stress. Periodontal diseases (PD), i.e gingivitis (G) and periodontitis (P) may also represent a source of low-grade systemic inflammation potentially impairing pregnancy outcomes. We previously showed increased oral inflammation in obese (OB) compared to normal weight (NW) pregnant women. Few studies investigated saliva (S) biomarkers in pregnant women. Here we analyzed C-reactive protein (CRP) concentrations and total antioxidant capacity (TAC) in saliva of pregnant women with different pre-pregnancy BMI, investigating their association with plasma CRP and with PD.

Materials and methods: 59 singleton pregnancies (15 NW, BMI 18-24.9; 44 OB, BMI ≥ 30) were studied at 3rd trimester. 15 obese women had gestational diabetes mellitus (GDM). Periodontal status was assessed by oral clinical examination in 24 OB and 15 NW. P: at least 4 teeth with pockets ≥ 4 mm. G: soft and/or calcified bacterial plaque and/or gingival bleeding in 4 or more teeth. In 36 women (15NW, 21OB - 8 with/13 no GDM) unstimulated S-samples were collected for analysis of CRP (ELISA) and TAC (AntiOxidant Assay). CRP was also measured in 44 (10NW, 34OB -11 with/23 no GDM) plasma samples (ELISA). Clinical and molecular data were compared between groups using independent-sample t-test adjusted by Levene's test. Correlations between values were assessed by Pearson test. Results were considered significant when $p < 0.05$.

Clinical cases and summary results: S-CRP levels were significantly related to BMI ($p=0.03$; $R=0.44$), with increased content in OB vs NW, reaching significance in OB with GDM ($p=0.04$). TAC was significantly higher in all OB vs NW (total OB vs NW: $p=0.01$; OB without GDM vs NW: $p=0.04$; OB with GDM vs NW: $p=0.01$) and significantly correlated with S-CRP ($p=0.00$; $R=0.77$). Plasma CRP levels were significantly increased in all OB vs NW (total OB vs NW: $p=0.00$; OB without GDM vs NW: $p=0.05$; OB with GDM vs NW: $p=0.01$), correlating with both S-CRP ($p=0.00$; $R=0.65$) and TAC ($p=0.00$; $R=0.59$). 83.3% OB and 40% NW had PD (P/G). PD in NW did not enhance molecular values, while in OB the presence of PD increased CRP/TAC compared to healthy NW, reaching significance for both S-TAC ($p=0.02$) and plasma CRP ($p=0.018$).

Conclusion: Mild inflammation was reported in many OB tissues, but nothing is known on markers in S of OB pregnant women, which represents an effective non-invasive diagnostic tool. CRP increase in OB plasma, marker of systemic inflammation, was confirmed in S. Higher S-TAC suggests the induction of a systemic antioxidant response detectable in OB-S. GDM possibly contributes to these increases. The higher PD frequency in OBvsNW might enhance CRP and compensatory antioxidant defenses in women with both OB-PD

Keywords: Pregnancy, obesity, oral pathology, saliva

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Insulin therapy in prediction glycemic parameters, fetal echography and perinatal outcomes in pregnancies complicated by diabetes mellitus

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Presenter: **Ćurković A**

Introduction: Objective to determinate body mass index (BMI) and hemoglobin A1c (HbA1c) levels, as predictors of insulin therapy (IT), on fetal echography findings and perinatal outcomes in pregnancies were complicated by diabetes mellitus (DM).

Materials and methods: Material and Methods we intended to evaluate the values of BMI and HbA1c levels on fetal interventricular septum (IVS) thickness, atrioventricular inflow E/A velocity ratio and perinatal outcomes. According to IT, we evaluated three groups of 32 patients of gestational DM treated with dietary changes, (GDMA1 group), 27 patients of GDM with IT (GDMA2 group) and 22 patients of type 1 diabetes (T1D group) in the 38th gw.

Clinical cases and summary results: Results In T1D group, we found statistical significant correlation BMI to IVS thickness ($p 0.036$); HbA1c to IVS thickness as well as mitral E/A velocity ratio ($p 0.013$ vs. $p 0.007$). In T1D group, HbA1c showed statistically significant correlation to BW ($p 0.037$). We determinated statistically significant difference between BMI and neonatal RDS ($p 0.027$). Statistically significant difference was confirmed between HbA1c level and RDS, as well as ICH in T1DM group ($p 0.048$ vs. $p 0.018$). HbA1c was statistically different to RDS in GDMA2 group ($p 0.036$).

Conclusion: Conclusion in DM and GDM pregnancies, maintaining optimal glucose levels determine fetal echography findings and perinatal outcomes.

Keywords: Diabetes mellitus, gestational diabetes mellitus, fetal echography, perinatal outcomes

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Effect of gestation on the 75g 2-hour OGTT

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Presenter: **Miira Klemetti**

Introduction: The Finnish Current Care Guideline recommends fasting plasma glucose (PG) ≥ 5.3 , 1h PG ≥ 10.0 , or 2h PG ≥ 8.6 mmol/l in a 75g oral glucose tolerance test (OGTT) as thresholds for gestational diabetes (GDM) diagnosis in both early (12-16 weeks) and late (24-28 weeks) gestation. Based on the HAPO study, the International