Objective: Comparison of cardiometabolic outcomes in women exposed to hyperglycaemia first detected in pregnancy (HFDP) and a control group 3–6 years post-partum in urban South Africa. **Design and Methods:** A comparative study was performed of 103 women exposed to HFDP and 101 not exposed to HFDP 3–6 years post-partum at Chris Hani Baragwanath Academic Hospital, Soweto. Index pregnancy data were obtained from medical records. Post-partum, participants were re-evaluated for biochemical analysis (two-hour 75gm OGTT, fasting insulin, lipids creatinine and glucose levels). Cardiovascular risk was assessed by estimation of the Framingham risk score (FRS). Carotid intima media thickness (CIMT) was used as a surrogate marker for subclinical atherosclerosis. Factors associated with progression to these cardiometabolic outcomes were assessed using multivariable logistic and linear regression models. **Results:** 46 (45.1%) HFDP-exposed women progressed to diabetes compared to 5 (5.0%) women in the control group (p<0.001); only 20 (43.4%) of the HFDP group were aware of their diabetic status. Adjusted odds ratio (aOR, 95% confidence interval (CI)) of progressing to type 2 diabetes was 11.0 (3.3–36.2). Both 10-year estimated cardiovascular risk (FRS) and mean CIMT were statistically higher in the HFDP-exposed group (8.46 IQR 4.9–14.4; 0.48 mm IQR 0.44-0,53, respectively) compared to the control group (3.48 IQR 2.1–5.7; 0.46mm IQR 0.42–0.50 respectively) though mostly driven by age, systolic blood pressure and diabetes. **Conclusion:** African women with a history of HFDP have an increased risk of cardiometabolic conditions within 6 years post-partum in an urban sub-Saharan African setting.

Diabetes Mellitus and Glucose Metabolism

DIABETES IN WOMEN AND DURING PREGNANCY

Co-Morbidity of Type 1 Diabetes Promotes Endometriosis Status-A Pilot Study

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Diabetes (DM) is a disease with significant morbidity and mortality and is a major public health problem worldwide. Endometriosis (ENDO) is a chronic estrogen-dependent gynecological condition that affects ~10% of reproductive-age women, causes debilitating pain and infertility, and carries an increased risk for ovarian cancer. Little is known about the co-morbidity of endometriosis and diabetes (Type 1, T1DM; Type 2, T2DM), despite both conditions sharing similar pathophysiology including chronic inflammation triggered by overactivation of the immune response. To evaluate if ENDO is promoted in women diagnosed with DM, we analyzed the expression of key molecular ENDO markers in endometriosis with no associated ovarian lesions collected from non-diabetic and diabetic patients at ENDO surgery. Formalin-fixed, paraffin-embedded sections, identified from analyses of TRINETX data set and retrieved from the Pathology Department, represented women with ENDO alone (n=10; mean age of 42 yo), ENDO/T1DM (n=6; mean age of 28 yo), and ENDO/T2DM (n=7, mean age of 42 yo). Body mass indices (kg/m^2) were comparable for women with T1DM (mean of 44.8) and T2DM (mean of 42.5) and higher than for ENDO alone women (mean of 30.8). Endometriotic lesions were analyzed by immunohistochemistry for markers of cellular proliferation (Ki67, PTEN, NICD1) and steroid hormone receptor expression (ESR1, ESR2, PGR-Total, PGR-B) in the epithelial and stromal compartments. We found that immunoreactive ESR1 in lesion epithelial glands (cytoplasm and nuclei) were higher in ENDO/T1DM and ENDO/T2DM than in ENDO alone (P<0.05). ENDO/T1DM lesions also showed higher immunoreactivity for ESR2 (epithelial cytoplasm and nuclei; P<0.05) and Ki67 (epithelial and stromal nuclei; P<0.05) than for ENDO alone and ENDO/T2DM. The nuclear levels of immunoreactive NICD1, the intracellular signaling component of NOTCH1, and of tumor suppressor PTEN tended to be higher and were lower (P<0.05), respectively in lesion stroma of ENDO/T1DM than of the other groups. The nuclear levels of immunoreactive PGR-T in lesion stroma were highly attenuated in ENDO/T1DM compared to ENDO alone and ENDO/T2DM (P<0.05). There were no differences noted in nuclear PGR-B levels among the groups. Limitations to the current study include the small size of patient cohorts, and the diagnosis of DM at, or close to, the time of ENDO surgery. Given the significant changes in key ENDO markers (lower PGR-T and PTEN; higher ESR1, ESR2, Ki67 and NICD1) associated with co-morbid T1DM in ectopic lesions, our findings suggest that women with T1DM show more significant ENDO progression than women without DM and with T2DM. Our results support synergistic co-morbidity of ENDO and T1DM, which while currently underdiagnosed, may have significant implications in ENDO disease management.

Diabetes Mellitus and Glucose Metabolism

DIABETES IN WOMEN AND DURING PREGNANCY

Deceptive Late Maternal Euglycaemia

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Background: Strict glycemic control is the most critical factor determining outcome in Gestational Diabetes mellitus. But having capillary blood glucose readings within the target levels, in the late trimester may be deceptive. If fetal hyperinsulinaemia and fetopathy have already set in, maternal glucose may be spuriously normal. We support this hypothesis based on our experience with 4 GDM patients who apparently reported normal blood glucose in late trimester, yet ended up with neonatal complications. **Materials and Methods:** Records of mothers of four neonates (Infant of diabetic mother) admitted in neonatal ICU with GDM associated complications were retrospectively analyzed. Diagnosis of GDM was made as per the ADA guidelines. The blood glucose values of the 9-point readings (Fasting, pre-lunch, pre-dinner, 1hr and 2hr post breakfast, lunch and dinner) every 3 to 5 days, which the patients shared online were plotted and studied. Mode of delivery and neonatal outcome were noted. **Results:** All