tightly regulated process, controlled by a wide repertoire of surface receptors able to integrate different inputs from the uterine environment. In early pregnancy, the effects of obesity-linked inflammation on dNK activity are largely unknown. This study aims to examine the effects of maternal obesity on dNK activity and expression of inhibitory and activating NK cell receptors.

Methods: dNK from lean (BMI 20-24.9 kg/m²; n = 16) and obese (BMI >30 kg/m²; n = 16) women in early pregnancy (7-10 weeks gestation), were characterized by flow cytometry for differences in activity (via CD107a) and surface expression of activating (NKp30, NKp44, NKp46, NKG2D, KIR2DS1) and inhibiting (NKG2A, KIR2DL1, KIR2DL4, LIRL1B) receptors. KIR2D gene levels were additionally measured by quantitative PCR (qPCR) analysis. The presence/absence of low-grade inflammation in our patient cohort was assessed in serum using a high-sensitivity CRP (C-reactive protein) ELISA.

Results: dNK from obese women showed elevated basal activity as defined by increased surface CD107a expression. Flow cytometry analysis revealed that the inhibiting NKG2A and activating NKp46 receptors were decreased in dNKs of obese women, while KIR2DS1/L1 levels were shown to increase. qPCR analysis demonstrated that mRNA levels of KIR2DL1 remained unchanged between lean and obese dNKs; in contrast KIR2DS1 mRNA levels were higher. Moreover, multicolour flow cytometry identified two distinct dNK populations unique in obese subjects characterized by KIR2DS1+/KIR2DL1- and KIR2DS1-/KIR2DL1+.

Conclusion: Our findings provide insight into how maternal obesity alters dNK function in early pregnancy through alterations in NK cell receptor expression.

P1.43 TROPHOBLAST TURNOVER IN HUMAN PLACENTAL CHORIONIC VILLI EXPLANTS INDUCED BY TRYPANOSOMA CRUZI IS MEDIATED BY TOLL LIKE RECEPTOR-2 ACTIVATION

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Congenital Chagas' disease, caused by the protozoan Trypanosoma cruzi (T. cruzi), is one of the major public health concerns in Latin America where more than one million women in fertile age are infected. During congenital transmission, the parasite is able to cross the placental barrier. It has been proposed, that the placenta present local anti-parasitic mechanisms such as an increase in trophoblast turnover. Moreover, the trophoblast expresses Pathogen Recognition Receptors such as Toll like receptors (TLRs); as an increase in trophoblast turnover. Moreover, the trophoblast expression of TLRs and elicits different cytokine profiles. Our results might explain, the secretion of hCG (54.02±9.9% vs infected HPCVE), Interestingly, the TLR-2 inhibition also decreased in dNKs of obese women, while KIR2DS1/L1 levels were increased. qPCR analysis demonstrated that mRNA levels of KIR2DL1 remained unchanged between lean and obese dNKs; in contrast KIR2DS1 mRNA levels were higher. Moreover, multicolour flow cytometry identified two distinct dNK populations unique in obese subjects characterized by KIR2DS1+/KIR2DL1- and KIR2DS1-/KIR2DL1+

Conclusion: Our findings provide insight into how maternal obesity alters dNK function in early pregnancy through alterations in NK cell receptor expression.

P1.44 THE EX VIVO INFECTION OF HUMAN PLACENTAL CHORIONIC VILLI EXPLANTS WITH TRYPANOSOMA CRUZI AND TOXOPLASMA GONDII IS MEDIATED BY DIFFERENT TOLL-LIKE RECEPTORS

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Trypanosoma cruzi (T. cruzi), the causative agent of Chagas disease, and Toxoplasma gondii (T. gondii), responsible for Toxoplasmosis are two parasites that can cross the placental barrier. T. cruzi and T. gondii present low and high congenital transmission rates, respectively. Toll-like receptors (TLR) -2, -4 and -9, expressed by the human placenta, recognize both parasites. Therefore, T. cruzi and T. gondii induction activation of those placental TLRs may be involved in the defense mechanism against both parasites and might determine the probability of transmission.

Objectives: To study the protein expression of TLR-2, -4 and -9, part of the associated cytokine profile and their possible role during parasite infection

Methods: Human placental chorionic villi explants (HPCVE) were incubated, during 2 hours, in presence and absence of 10⁵ T. cruzi trypomastigotes or 10⁷ T. gondii tachyzoites and in the presence or absence of blocking antibodies (TLR-2, -4) or suppressive oligonucleotides (TLR-9). LPS and CD40-DC were used as positive controls. TLRs protein expression was determined by Western blotting and parasite infection was analyzed by real time PCR. The presence of IL-1, IL-4, IL-6, IL-8, IL-10, IFN-γ and TNF-α in the culture media was determined by ELISA.

Results: T. cruzi and T. gondii induce both a statistical significant increase of the protein expression of TLR-2 and TLR-4, but not of TLR-9. On the other hand, T. cruzi induces decreases of pro-inflammatory and immuno-dulating cytokines than T. gondii. Interestingly, the inhibition of TLR-2 increases the T. cruzi DNA load and the inhibition of TLR-4 and -9 increases the T. gondii DNA content in HPCVE.

Conclusion: The infection of HPCVE with both parasites is mediated by different TLRs and elicits different cytokine profiles. Our results might explain, at least partially, the different transmission rates of T. cruzi and T. gondii.

P1.45 SHARED IMMUNOREGULATORY PROPERTIES OF GALECTIN-9 AND PD-L1 IN PREGNANT WOMEN AND PATIENTS WITH STAGE IV MELANOMA

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Objectives: There are striking similarities between trophoblasts and tumors, specifically when it comes to immune regulation. We studied two molecules, PD-L1 and galectin-9, which are important in promoting immunosuppressive effects of tumors, to test if they have any relevance in human pregnancy.

Methods: Maternal plasma samples were collected monthly from healthy, primagravid women throughout pregnancy and compared to non-pregnant controls and patients with stage IV melanoma. Plasma levels of galectin-9 and PD-L1 were measured by ELISA and compared by a student t-test. Immunohistochemistry (IHC) for galectin-9 and PD-L1 in pregnant women and patients with stage IV melanoma.

Results: Galectin-9 was significantly increased in the pregnant mother’s plasma (2524pg/mL) as well as cancer patient plasma (3969pg/mL) compared to non-pregnant/healthy controls (997pg/mL; p<0.001). When we grouped mothers into those having a male and those having a female child, we observed significantly more soluble galectin-9 in the plasma of women carrying a male (3013 ± 1360pg/mL; p<0.0001). Although galectin-9 levels were elevated throughout pregnancy, soluble PD-L1 levels increased with gestation, dropping dramatically 6 weeks post-partum. IHC demonstrated high galectin-9 and PD-L1 staining around the trophoblastic cells of the placenta and around the tumor edge.

Conclusions: Similar to the phenomenon seen in cancer biology, pregnancy supports the down-regulation of immunity by both systemic