

Expression of invasion related MMP-1 was also up-regulated by LC and increased expression of active form of MMP-1 was detected in LC treated cells.

Conclusion: Our results suggest that *Lactobacillus crispatus* promotes trophoblast invasion via up-regulation of MMP-1. Our findings suggest indispensable roles of LC which dominate in healthy human vagina. Our results can explain why BV and other lower female genital tract infections harm successful human pregnancies.

25.

SUPPRESSYN MAY PLAY A CENTRAL ROLE IN TROPHOBLAST CELL FUSION RESPONSE TO OXYGEN ENVIRONMENTS

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Objective: We previously described and analyzed the function of a novel anti-fusogenic protein suppressyn(SUPYN) in cultured trophoblast cells. The physiological state of the placenta is hypoxic varying between 2 and 5% in early pregnancy. Here we performed expression analysis of cell fusion related genes to determine whether SUPYN may play a role in trophoblast syncytialization response to hypoxia and hyperoxia.

Methods: Primary trophoblast cells were isolated from term placenta and cultured under several O₂ conditions. RNA transcripts were collected every 24 hours and subjected to semi-quantitative RT-PCR. A newly-established SUPYN specific ELISA was used to detect alterations in cell associated and secreted forms of SUPYN protein during cell fusion.

Results: Fusion of primary trophoblast cells was predominantly suppressed under the range of “physiologic” hypoxic conditions and both syncytialization and hCG gene expression were lower than in higher O₂ environments. Expression of syncytin-1 was lower but SUPYN transcripts higher in low O₂ environments. This phenomenon was confirmed at the protein for both cell-associated and secreted SUPYN.

Conclusion: Converse syncytin-1 and SUPYN transcriptional and translational responses to surrounding oxygen concentrations suggest both are important in the effects of hypoxia and hyperoxia on placental syncytialization. Further analysis of these fusion-associated transcripts under different O₂ condition will likely improve our understanding of placental physiology and placental diseases like pre-eclampsia and PIH.

26.

A CASE WITH HYDRAMNION AND DIAGNOSED AS PLACENTAL HEMANGIOMA AFTER DELIVERY

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Introduction: Hydramnion is known to be caused by diabetes or fetal congenital malformation, but in rare case, large placental hemangioma can induce hydramnion. We experienced a case of hydramnion caused by placental hemangioma.

Case: A 36-year-old primipara. She had a prenatal care in Australia until 32 weeks, and since then at a midwifery clinic in Japan. On 37 weeks and 1 day, she visited the clinic for amniotic fluid runoff. At that time, hydramnion was recognized (AFI 27.5), so she was transferred to our hospital. Her HbA1c and glycoalbumin were normal, and no apparent malformation was found in fetus. Caesarean section was performed at 37 weeks and 5 days because of induction failure. The baby was born at 3350g, Apgar score 9/9, UA-pH 7.373, and a boy. He had a heart failure and was admitted to NICU for 7 days. No obvious malformation was pointed out, but infantile hemangioma was found throughout the body. A 13.5×10.5×5.5cm well-defined nodular lesion was found in placenta. The pathological diagnosis was placental hemangioma.

Discussion: Placental hemangiomas are found in about 1% of the placenta, and if the tumor diameter is more than 5cm, perinatal complications such as hydramnion may be induced.

In neonates, they may have a heart failure like this case, and there are hemangiomas in the viscera which required treatment in rare case. This case suggests that placental hemangioma should be considered in case of hydramnion. Additionally, neonatal heart failure or hemangiomas may be observed, so advanced facilities is desirable for delivery.

27.

PROGNOSTIC FACTORS FOR THE OUTCOMES OF LOW-LYING PLACENTA BY TRANSVAGINAL ULTRASOUND

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Objectives: Low-lying placenta (LLP) are regarded as high-risk conditions of pregnancy. However, lower uterine segment extension for placental migration related to LLP remain unclear. In this study, we searched placental position and findings on ultrasound on LLP.

Methods: We retrospectively reviewed the cases of LLP for the past 5 years from medical records (2013–2017). Location of placenta, cervical length and spongyous(S-) findings suggest venous plexus were defined. Mode of delivery, blood loss and placental weight were also searched.

Results: In our cases, 33 LLP were located on posterior wall attachment and only one was on anterior. This anterior-located LLP with S-finding caused to massive bleeding which massive blood transfusion and 3 times UAE were needed. In contrast, only one case in 33 posterior cases needed transfusion. Average cervical length at diagnosis was significantly longer in the group with S-finding (n=13, 40.2 mm) compared to no S-finding group (n=21, 32.7 mm, p=0.01). Caesarean section was performed in all cases with S-finding. Vaginal delivery was performed in 5 cases in the other group. There was no difference in the amount of blood loss, infant birth weight or placental weight.

Conclusions: Surprisingly, almost all LLP located on posterior wall; anterior-located low-lying placenta showed miserable outcome on delivery. S-finding correlated with cervical length, suggesting that failed uterine lower segment extension contribute to placenta migration can be predicted from this ultrasound finding.

28.

ROLE OF PLACENTAL ATX-LPA SYSTEM AND ITS PATHOLOGIC RELEVANCE TO HYPERTENSIVE DISORDERS OF PREGNANCY

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Objective: Lysophosphatidic acid (LPA), produced by enzymatic action of a secretory protein, autotaxin (ATX), exerts diverse functions through six receptors. Our study aimed to clarify the role of ATX-LPA system in placenta and its association with the pathology of hypertensive disorders of pregnancy (HDP).

Methods: Placental expression of LPA receptors was compared between normal pregnancy and HDP. We assessed the distribution of ATX and LPAR3 in placenta using immunohistochemistry. The impact of LPA stimulation on gene expression profiling was examined in LPAR3-transfected trophoblast cells. Using serum samples, a correlation of ATX levels to oxidative stress markers and fetal growth was evaluated.

Results: ATX expression was ubiquitous, whereas LPAR3 expression was restricted to differentiated trophoblasts. HDP placentas showed increased mRNA expressions of LPARs, whereas the elevation of protein expression was limited to LPAR3. LPA signaling mediated by LPAR3 enhanced the gene expressions involved in immunomodulation and cell differentiation. In normal pregnancy, serum ATX level in the second trimester was negatively correlated with birth weight-to-placental weight ratio. Placental ATX expression in the third trimester decreased in early-onset HDP and increased in late-onset HDP. Serum ATX level was positively correlated to oxidative stress markers.