nant, NP; normal-pregnant, P) were injected intraperitoneally with PTZ (40 mg/kg) to induce seizures. CsA (5 mg/kg) was injected in advance of PTZ into PE rats to observe its effect on PTZ-induced seizures.

Results: PTZ successfully induced seizure activity in all groups. Latency to seizure was significantly ($P < 0.01$) less in the PE-PTZ group than in PTZ-treated controls. Pretreatment with CsA prolonged ($P < 0.05$) latency to seizure, and decreased stage 5 seizure rates. Significant increased ($P < 0.05$) in the serum levels of the pro-inflammatory cytokines TNF-αand IL-17 in the PE-PTZ groups, and decreased ($P < 0.05$) in their levels following CsA administration.

Conclusions: Cyclosporin A may act as immune-modulators and anti-inflammatory therapies to attenuate seizure on an eclampsia-like rat model.

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[289-POS]

Placental heparan sulphate glycosaminoglycans in pre-eclampsia

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Objectives: Pre-eclampsia (PE) is a serious pregnancy complication which affects 3–5% of the pregnant population. To date there is no 'cure' for PE. However, the placenta seems to play an important role in the pathogenesis of this disease. Human placenta is an abundant source of proteoglycans to which glycosaminoglycan (GAG) side chains are attached. Heparan sulphate proteoglycans (HSPGs) have been implicated in many biological processes including, anticoagulation, angiogenesis and inflammation. However, their role in human placentae is largely unknown.

The aim of this study was to determine the mRNA expression and protein abundance of HSPGs as well as the structure and relative abundance of GAGs in PE-affected placentae compared to gestation-matched controls.

Methods: The mRNA expression of HSPGs was determined using real-time PCR. Proteoglycans (PGs) were isolated from placental tissue by anion-exchange chromatography. PG enriched samples were investigated using ELISA with antibodies against the protein core of a range of PGs, as well as GAG chains, and Heparan Sulphate (HS) linkage regions following 0.01 U/mL heparinase III digestion.

Results: The mRNA expression of HSPGS, syndecan 1 & 2, glypican 1 & 3 and perlecan was significantly reduced in PE-affected placentae compared to controls ($p < 0.05$, $n = 40$ each, Mann–Whitney U test).

Syndecans1-4, glypicans1 & 3, biglycan, decorin and perlecan were identified in placental tissues by ELISA following anion exchange chromatography. HS abundance was further investigated using ELISA following digestion with heparinase III to reveal the HS linkage region common to all HS and heparin chains. In PE-affected placentae there was significantly less HS linkage regions compared to controls ($1.53 \pm 0.0.19$ vs 1.03 ± 0.11, $n = 20$ each, $p = 0.0391$, Mann–Whitney U test). This correlated with the reduction in HSPG mRNA expression.

Conclusions: It is plausible that the reduction in PG expression and HS abundance may contribute to the pathogenesis of PE by altering thrombin management or angiogenic and inflammatory processes within the placenta.

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[290-POS]

Flow-mediated dilatation of brachial artery is correlated with interleukin-6 in patients with pre-eclampsia

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Objectives: Endothelial dysfunction is thought to be one of the mechanism involving in pre-eclampsia manifestation. Likewise, one of the inflammatory mediators involved in this process is interleukin (IL)-6, a mediator synthesized by mononuclear phagocytes, endothelial cells and fibroblasts in response to inflammatory stimuli. IL-6 has been described increased in women with pre-eclampsia. Thus, we aimed to investigate the association between endothelial dysfunction (by flow-mediated dilatation) and IL-6 levels in women with pre-eclampsia.

Methods: Following ethical approval, a written consent was obtained from 21 women diagnosed with pre-eclampsia. Endothelial function was evaluated by brachial artery flow-mediated dilatation. IL-6 was quantified using Mag-PlexTH-C - microspheres system, in maternal plasma. Pre-eclamptic groups was divided into altered ($n = 9$) and normal ($n = 12$) endothelial function, considering a cutoff point of 10%, below or above, respectively. The Mann–Whitney U-tests was carried out to compare the IL-6 values between pre-eclamptic groups. Correlations between the parameters were tested with a Spearman's Rank correlation tests. The null hypothesis was rejected when $p < 0.05$.

Results: Higher levels of IL-6 was observed in altered flow-mediated dilatation test group in relation to normal endothelial group (median [IQR]): 4.34 pg/mL [3.38; 6.22] and 2.56 pg/mL [1.57; 3.67]; $p = 0.028$, respectively. When an analysis was made between flow-mediated dilatation levels and IL-6, a negative correlation was found ($r = -0.514$, $p = 0.017$).

Conclusions: As expected in patients with pre-eclampsia, a high inflammatory response showed a low flow-mediated dilatation. The significant correlation between a potential clinical prediction method and a well-known inflammatory cytokine support the importance of working not only with one potential biomarker to predict pre-eclampsia, but also, with a group of molecules and/or techniques, in order to increase the chance to diagnose the disease as early in pregnancy as possible – before signals and symptoms.

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[291-POS]

Use of carperitide for postpartum diuresis of severe preeclampsia

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Objectives: In addition to blood pressure control, postpartum control of urine output is a major issue in hypertensive pregnancy, HELLP syndrome or placental abruption. Delayed diuresis after delivery may easily cause abdominal dropsy, pulmonary edema, or late-onset renal failure. We recently added a new medicine, carperitide (atrial natriuretic peptide, hANP®), in addition to standard diuretic, like furosemide, for diuresis in such severe postpartum conditions. The objective of this study was to reveal the clinical and cost effectiveness of use carperitide in postpartum intensive care after preeclampsia.

Methods: Medical records of the patients who were administered carperitide in Nara Medical University Hospital after delivery or cesarean section for severe preeclampsia, HELLP syndrome and placental abruption were reviewed. Six patients who used carperitide were compared with ten patients who did not. Duration between delivery or administration of carperitide and maternal massive diuresis were retrieved as well as background, maternal outcome, duration of stay in hospital and blood pressure.

Results: There have been no maternal deaths or the need for artificial dialysis after these diseases for recent five years. Use of carperitide significantly decreased maternal mean blood pressure after 48 h of operation and shortened the duration between delivery or cesarean section and massive diuresis. No adverse effect was defined.

Conclusions: Though it was not a randomized, controlled study, in the intensive care setting, use of carperitide in infusion-and-output control after preeclampsia and related severe diseases was associated with improved kidney protection, shortened duration of intensive care and hospitalization with fewer side effects. In difficulty of hydration control after preeclampsia, carperitide may be a useful medicine for intensive maternal care.

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[292-POS]

TLR expression in the placenta during labor and preeclampsia

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Objectives: The mechanisms that are involved in maintaining a human pregnancy to term, and the switches that lead to a normal labor and pregnancy outcome or indeed an adverse outcome such as miscarriage, preeclampsia, fetal growth restriction or preterm labor, are complex but the role of the placenta is crucial to them all. TLR family members are expressed differentially in a variety of cells and tissues. Toll-like receptors (TLR) are the principal signaling molecules through which mammals sense infection, so called innate immunity. *Aims:* The first aim of this study was to examine the spatial expression of TLRs in placentae obtained from women who delivered by caesarean section, and normal vaginal delivery, by defining precise sampling zones. The second aim was to determine the expression of TLRs in normal pregnancy with preeclampsia, both labor and non-labor.

Methods: Samples were obtained from 12 sites within each placenta: 4 equally spaced apart pieces were sampled from the inner, middle and outer placental zones. Non-labor, labor and preeclampsia were studied. TLRs gene expression was analyzed by RT-PCR using validated TaqMan® Gene Expression assays.

Results: There was a negotiable expression of TLR9 and 10 in the human placenta. There was a significant increase in TLR1 expression in the labor control compared to labor preeclampsia groups at the inner and middle sites ($p = 0.04$, $p = 0.002$). TLR5 was significant increase in the non-labor group compared to labor group at the middle zones ($p = 0.004$). No other differences were found.

Conclusions: TLRs may play a role in the physiology of labor and the pathology of pre-eclampsia.

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[293-POS]

Prediction of the fetal-placenta ischemia with umbilical artery velocity