In women post CS, anti-Xa levels do not reflect the full anticoagulant profile of tinzaparin and thrombin production is effectively reduced even when anti-Xa levels are negligible.

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The use of low-molecular-weight heparin nadroparin calcium by pregnant women with thrombophilia

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Most women with a thrombophilia have healthy pregnancies. However, the thrombophilia can contribute to many pregnancy complications (preeclampsia, intrauterine growth retardation, abruption placentae, stillbirth) and recurrent miscarriages. We evaluated the pregnancy outcome by women with inherited / acquired thrombophilia, treated with Fraxiparine.

Methods: 292 women with multiple genetic thrombophilic mutations / acquired thrombopfilia with a history of last two recurrent miscarriages, or one of the pregnancy complications, were treated during their consecutive pregnancies with Fraxiparine, from the time of verification of the pregnancy throughout gestation, until 4–6 weeks in puerperium. In most cases, a fixed dose of Fraxiparine (0.3 ml s.c.) was administered. The women were tested for the mutation of FVLeiden, FII 20210, MTHFR, FXIIC46T, FXIII val34leu, PAI-I, fibrinogen G455A and antiphospholipid antibody.

Results: By previous untreated pregnancies (n = 802), the rate of fetal loss (early and late) was 65.1% (average number 1.6), 33.6% live infants survived. By treated women we had a good pregnancy outcome (delivery 87%, fetal loss only 13%). Abortion risk ratio: 0.21 and number necessary to treat: 1.67. We didn't find out any statistically significant connection between the type of thrombophilia and the way of terminating the pregnancy.

Conclusion: Our results indicate that a therapy with nadroparin calcium by pregnant women with thrombophilia significantly reduces recurrent miscarriage, pregnancy complications and improves maternal and fetal outcome.

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Genetic variability of LXRbeta gene might contribute to preeclampsia

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Preeclampsia (PE) is a frequent complication of pregnancy and is one of the leading causes of perinatal mortality. Both genetic and environmental factors may affect its risk. Lipid metabolism, especially cholesterol metabolism is associated to the pathology. Among the actors implicated in this metabolism, Liver X Receptors alpha (LXRalpha, NRH3) and beta (LXRbeta, NR1H2) play a central role. They belong to the nuclear receptors superfamily and are activated by cholesterol derivatives. Their implication in preeclampsia is also suggested as they can modulate trophoblast invasion and they regulate Endoglin (CD105) gene expression, a marker of PE whose expression is highly correlated to the severity of the pathology.

The aim of this study was to investigate the genetic association between LXRalpha and LXRbeta genes and PE. The association between LXRalpha (rs2279238 and rs7120118) and LXRbeta (rs35463555) single nucleotide polymorphisms (SNP) and the pathology was assessed in 170 individuals with preeclampsia and 307 controls. Genotypes were determined by High Resolution Melting analysis using LC480 apparatus (Roche Diagnostics, Meylan, France). Using a logistic regression model, the different alleles and genotypes from those polymorphisms were analyzed according to case/control status.

While we did not find any association between LXRalpha SNPs and the disease, allele C of LXRbeta polymorphism (rs35463555) showed a strong association with PE (Odds ratio, 1.508; 95% confidence interval, 1.148–1.980; P = 0.003). This study suggests for the first time an association between LXRbeta and PE and could contribute to better understand the links between cholesterol metabolism and the pathology.

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Decreased fibrin clot porosity in patients with antiphospholipid syndrome

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Background: It has been reported that patients with type 1 diabetes and young males with myocardial infarction form a fibrin clot, which is tighter and more resistant to fibrinolysis in comparison to the fibrin clot formed by healthy controls.

Materials and Methods: We evaluated fibrin clot porosity in plasma-samples from 46 patients with APS, strictly fulfilling the Sydney criteria. Previously established flow measurement technique was used to determine the fibrin clot porosity, as expressed as the Darcy constant (Ks). A low Ks level indicates a tighter fibrin clot. Ks-levels were compared to reference Ks values from healthy individuals.

Results: The mean Ks-levels were significantly lower in the samples from patients with APS (6.7±2.9) compared to reference Ks values (10.7±1.6), p < 0.0001. Within the APS-group Ks-levels did not vary substantially depending on age, clinical APS – manifestations or aPL – pattern supporting the diagnosis at inclusion. However IgM antibodies to Cardiolipin and dalteparin-treatment seemed inversely related to fibrin gel porosity. There was also a trend towards lower Ks-levels for the subgroup of patients with previous obstetric morbidity.

Conclusion: Patients with antiphospholipid syndrome form a tighter and more stable fibrin clot compared to the clot formed by healthy controls. To our knowledge this is a new finding.

Future studies including larger patient materials and controls may shed further light on the aetiology of APS, which could contribute to better risk assessment and management for APS-patients.

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Endogenous thrombin potential (ETP) in a healthy female population

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Introduction: Thrombin generation is a pivotal function of plasma in hemostasis and thrombosis. Prothrombin time and Activated partial thromboplastin time are not adequately sensitive for hypercoagulable states. In contrast, ETP seems to be a very sensitive indicator for all forms of hypercoagulability.

Aim: To study ETP in a healthy female population in purpose to identify higher risk of thrombosis.

Materials and Methods: We studied 80 healthy females aged 34.02±6.8. The characteristics of the studied population are: Medical history: free, Family medical history: 6 (7.5%), Arterial hypertension: none, Diabetes mellitus: none, Hypercholesterolemia: 4 (5%), Abdominal obesity: 25 (31.25%), Smoking: 38 (47.5%), Oral contraceptive: no use, Alcohol use: none.

Thrombin generation was performed on platelet poor plasma with the ETP reagent of Siemens in the automated analyzer BCS-XP. We also determined INR with Thromborel S (Siemens). From ETP we studied AUC (mA) – area under curve, AUC cal., T_ lag (s), Tt_max (s).

Results: See the tables.

INR	AUC (mA)	AUC cal	T_lag (s)	T_max (s)
0.99±0.11	411.7±53.8	107.2±13.2	20.8±4.6	55.1±12.4

Group	AUC (mA)	AUC cal	T_lag (s)	T_max (s)
Smoking (n:38)	409±60	106±15.8	21.5±5.1	57.5±13
Non smoking (n:42)	413±47	108±10.4	20.31±4.05	52.9±11.5
Abdom.obesity(n:25)	433±59	113±15	21.7±5.4	53.2±11.9
Non Abdom.obes.(n:55)	402±48	104±11	20.5±4.2	56±12.6

The data analysis was made with SPSS 16.0. There was found a significant difference of AUC (mA) in the groups with abdominal obesity against the group without abd. obesity (p:0.01) and of AUC cal in the same groups (p:0.02). All the other groups have no significant differences (NS).