**Variation of factor XIII level during pregnancy**

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**Introduction**

Pregnancy alters the haemostatic system into a hypercoagulable state, which increases throughout pregnancy and is maximal around term. Most notably there is a significant change to coagulation, with increased factor VII, VIII, X and von Willebrand factor activity, marked increases in fibrinogen, and decreased activity levels of natural anticoagulants (protein C, protein S). Several studies evidenced a significant reduction of Factor XIII (FXIII) activity during the second and third trimester compared to first trimester in normal uneventful pregnancies. Aim of our study was to evaluate the variation of FXIII activity during the three trimesters to assess any similar decrease.

**Methods & Materials**

The study was conducted on a population of 20 healthy pregnant women (age 24-41, mean 32.8). The criteria of exclusion were deficiency of FXIII diagnosed before pregnancy, and antithrombotic therapy for any reason. All women were underwent laboratory evaluation at the first (T1), second (T2) and at third (T3) pregnancy trimester. Factor XIII activity was measured on BCS XP analyser using Berichrom FXIII reagent. Results was presented as mean ± SD; the statistical analysis was evaluated by using Student’s T test for paired data (p-value significant if less than 0.05).

**Results**

The mean FXIII activity was 106.2 ± 26.5 during first trimester, 99.1 ± 25.1 and 85.8 ± 26.7 during second and third trimester respectively. We have evidenced a statistically significant reduction of FXIII activity comparing the first to the third trimester (T1 vs T3, p=0.02), though the reduction was not statistically significant comparing the first trimester to the second one (T1 vs T2, p=0.38) and comparing the second trimester to the third one (T2 vs T3, p=0.11).

**Conclusion**

We have found a significant reduction only comparing the first trimester to the third one; the difference about what was observed so far could be due to the small number of studied patients. We think that large, controlled and comparative studies are needed to confirm FXIII reduction in pregnancy to avoid misdiagnosis and inappropriate use of fresh frozen plasma or FXIII concentrates for prevention or treatment in case of bleeding.

**References:**


The authors thank Dr. Rina Scamardi for assistance in the graphic design.