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Hereditary antithrombin deficiency and venous thromboembolism in pregnancy - results of a retrospective multicenter study

Background

Antithrombin (AT) is a key regulator of coagulation, and AT deficiency (ATD) results in increased risk of venous thromboembolism (VTE). Subclassification can divide ATD in high- and low-/intermediate VTE risk. Women with high-risk ATD in pregnancy have a significant risk of VTE without anticoagulation but the optimal anticoagulant regimen to prevent pregnancy-related VTE is unknown.

Aims of the study

To identify optimal doses of low molecular weight heparin (LMWH) to prevent pregnancy-related VTE without hemorrhage, and to investigate if AT concentrate peripartum could reduce postpartum VTE in women with high-risk ATD.

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Methods

Retrospective study including 115 pregnancies in 57 women with subclassified ATD treated with LMWH in Denmark, Norway, and Sweden (1991-2017).

Results

Fifteen VTEs occurred in the 100 pregnancies with high-risk ATD, in contrast to none in the fifteen pregnancies with low-/intermediate-risk ATD. Six of the twelve antepartum VTEs occurred before week 9. The high-risk ATD pregnancies with LMWH doses <5000 IU/24h, 5000-12500 IU/24h and >12500 IU/24h revealed different VTE risks ($p=0.02$). The hazard ratio for VTE was 1.0 (reference), 0.5 (95% confidence interval; CI [0.1, 2.3] and 0 (95% CI [0, ∞]), correspondingly. Previous VTE was the only additional risk factor reaching statistical significance.

One VTE (1.5%) occurred in the 66 term pregnancies with peripartum AT concentrate infusion in contrast to the two VTEs (25%) in the 8 pregnancies without AT concentrate.

Peripartum hemorrhage (>1000 mL) occurred in 8 (11%) term pregnancies.

Conclusion

In high-risk ATD pregnancies with previous VTE, our results support prophylaxis with high prophylactic doses of LMWH from confirmed pregnancy and to give AT concentrate peri-/postpartum.

Keywords

Antithrombin Deficiency, Pregnancy, Thromboembolism Prophylaxis.

Biography

Ingunn Dybedal is a healthcare professional based in Norway and is associated with Oslo University Hospital (OUS). She is actively engaged in clinical practice and contributes to patient care and departmental activities within her specialty. With a strong commitment to professional development, Ingunn continues to expand her expertise through ongoing clinical work, collaboration with multidisciplinary teams, and participation in educational and research initiatives at the hospital.