

Heart failure as a strong risk factor for venous thromboembolism in pregnancy



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Purpose: Pulmonary embolism (PE) is still the leading cause of maternal death in developed countries. Thrombophilic disorders have been considered as predisposing for venous thromboembolism (VTE) during pregnancy. The knowledge of the relevant risk factors (RF) for VTE could orient the routine use of prophylactic measures to prevent this fatal disease.

Methods: In a prospective case-control study of a high-risk cardiology-obstetrical population from a single reference maternity, from July 1996 to July 2001, we identified 54 women with well documented acute VTE during pregnancy or the postpartum period and 54 control women without the event until 8 weeks after delivery, matched by age, parity and ethnicity. We assessed the known RF for VTE, including the most prevalent thrombophilic genes: factor V Leiden and the G20210A prothrombin mutation. Odds Ratios (OR) and the Confident Intervals (CI) were calculated to identify the relevant risk predictors for VTE.

Results: Mean maternal age 28 ± 7.1 years, 80% Caucasian and 20% non Caucasian, 26% multiparous. Among the cases, 33% had heart disease (HD) and all them were in heart failure (HF) class IV by the NYHA classification. The diagnosis of HD and number of patients were: peripartum cardiomyopathy (7), rheumatic heart disease (6), ventricular septal defect (3), prosthetic mitral valve (1) and acute myocardial infarction (1).

There were no difference in the frequencies of the thrombophilic genes between the cases and control subjects. Table I summarises the relevant RF for VTE.

Table I. Relevant results

Risk factor	OR	CI 95%	P value*
Previous VTE	11.10	1.10 - 115.43	0.04
Heart disease	8.28	2.34 - 29.33	0.001
Obesity	2.41	0.88 - 6.64	0.08
Infection	2.42	0.93 - 6.27	0.10
Smoking	2.38	0.83 - 6.82	0.11

*p value < 0.05 = significant and p > 0.05 or ≤ 0.15 of borderline significance

Conclusion: Heart disease in HF class IV and previous venous thromboembolism are independent RF for VTE during pregnancy and postpartum period. Therefore, routine use of prophylactic anticoagulants is recommended in these patients.