Aim: To determine genetic thrombophilia and anti-phospholipid antibodies (APA) in pregnant women with prosthetic valve thrombosis. Material and Methods: We have examined 7 pregnant women (25.7 ± 3.47 years) with mechanical valve thrombosis (mitral valve - 6 cases, tricuspid valve - 1 case). Analysis of thrombophilia and APA was performed in all patients. Results: History of obstetric complications (recurrent fetal loss, intrauterine growth restriction, preeclampsia, antenatal death) was observed in 3 women. Thromboembolic complications were observed in 4 women (stroke in 2 patients, renal and spleen thrombosis in 1 patient, iliofemoral thrombosis after cesarean section in 1 patient). Before the admission in our hospital (in 8-28 weeks of gestation) 5 patients received warfarin without regular monitoring, 2 patients - LMWH in low doses. 1 patient did not receive any anticoagulants in pregnancy during 1 month. Pregnancy was interrupted in all cases. Fetal mortality was 71.4% (5 cases). One patient died due to pulmonary embolism 48 hours after the simultaneous cesarean section and valve replacement. D-dimer was elevated in all patients (1-4 microg/ml). Multigenic thrombophilia (4 mutations concomitantly) and APA were detected in 100%. MTHFR C677T, PAI-1 675 4G/5G, t-PA I/D, F Hageman 46C/T, fibrinogen C 455G/A, FV Leiden, prothrombin G20210A were detected in 6, 6, 2, 2, 4, 2 and 2 cases respectively. Lupus anticoagulant, anti-beta2-glycoprotein I, anticardiolipins, anti-annexin V antibodies were detected in 3, 6, 2 and 3 patients respectively. Conclusion: Prosthetic valve thrombosis in pregnancy may be associated with hypercoagulable state and inadequate anticoagulation in women with multigenic thrombophilia and APA-circulation.