

Thrombotic and hemorrhagic complications during pregnancy, delivery and the postpartum period in females with prosthetic heart valves

G.G. Sefieva, U.M. Shadrina, E.V. Karelkina, O.A. Li, A.E. Bautin, A.V. Yakubov, O.M. Moiseeva, T.V. Vavilova, O.B. Irtyuga

Almazov National Medical Research Centre, ALMAZOV NATIONAL MEDICAL RESEARCH CENTRE, Saint Petersburg, Russian Federation

Funding Acknowledgement: Type of funding sources: None.

Background/Introduction: Women with mechanical prosthetic heart valves are at greatest risk of developing complications. The main reason is that mechanical prosthetic heart valves require lifelong anticoagulation to reduce the high risk of associated thrombotic and hemorrhagic complications.

Purpose: The main goal of this study was to estimate risk factors and frequency of thrombotic and hemorrhagic complications during pregnancy, delivery and the postpartum period in women with prosthetic heart valves.

Methods: According to retrospective cohort analyses in this study were included 70 patients with prosthetic heart valves who delivered in a specialized perinatal center from October 2010 to February 2020. All the patients were divided into two groups depending on prosthesis type: mechanical prostheses (44 deliveries in 44 patients), biological prostheses (22 deliveries in 19 patients). All patients were performed ECHO (Vivid 7, GE, USA). The average age were 30.7 ± 5.2 years. The N-terminal brain natriuretic propeptide (NT-proBNP) concentration was determined by the quantitative electrochemiluminescence method using a Cobas E 411 analyzer (Roche, Switzerland). The activity of the anti-Xa factor was measured by chromogenic assays.

Results: In 9 (21.4%) pregnant with a mechanical valve prosthesis (MVP), prosthetic thrombosis was recorded until 2016. In 1 patient with

mechanical valve prosthesis (2%) during pregnancy was complicated by an acute cerebral circulation disorder. Since 2016 there were monitored the activity of the anti-Xa factor. In 7 patients on the background of a change in anticoagulant therapy, pregnancy stopped in the early stages. Before pregnancy, 31.4% of the patients didn't have heart failure clinical manifestations, but in 12 (17.1%) patients during pregnancy had increase in NYHA Class maximum to NYHA Class III.

The average NT-proBNP concentration was 912.3 ± 1586.6 pg/ml. The frequency of the cesarean section in both groups was high: in patients with mechanical valve prosthesis in 78.5% and in the group of patients with biological valve prostheses in 68.1% of cases. There were not registered any new cases of prosthetic thrombosis after delivery, however, 9 patients had hemorrhagic complications in the early postpartum period, which required relaparotomy and blood transfusions. Regardless of frequent complications during pregnancy and in the postpartum period, no fatal outcomes have been reported.

Conclusion: The absence of mortality over the 9-years old observation and delivery in patients with valvular prostheses demonstrates the feasibility of monitoring and delivery of this category of patients in a specialized multidisciplinary medical center with experience in managing patients during pregnancy with valvular prostheses on anticoagulant therapy.