

Incidence of maternal and fetal complications in pregnant with mechanical prosthetic cardiac valves: a cohort study

G. Youssef¹, M. Hosny¹, W. Ramadan², E. Baligh¹

¹Cairo University Hospitals, CardioVascular Department, Cairo, Egypt; ²Cairo University Hospitals, Gyn-Obstetric Department, Cairo, Egypt

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Background: In developing countries, an unusually large number of women of childbearing age have mechanical valves because rheumatic fever and concomitant valvular heart disease are still common and most severely affect the young. Managing anticoagulation during pregnancy is challenging, and the rate of complications is relatively high.

Purpose: The aim of this study was to detect the incidence of maternal and fetal complications in pregnant women with prosthetic valve in a high-risk pregnancy unit in one of the developing countries.

Methods: This study included 106 pregnant women with prosthetic heart valves on oral anticoagulant therapy. Excluded from the study were patients with low ejection fraction (<50%), patients with other comorbidities that may affect the pregnancy outcomes and patients who were not willing to share their data. Patients were followed up since presentation to the high-risk pregnancy unit till delivery. At each visit, women were clinically assessed for the occurrence of complications (heart failure, infective endocarditis, prosthetic valve dysfunction, systemic emboli, new onset arrhythmia, antepartum hemorrhage, or death). Babies were evaluated by an Obstetrician for intrauterine growth retardation or fetal death, abortion, oligo or polyhydramnios, and congenital heart diseases.

Results: The mean age was 28.5±4.2 years, 58 patients (54.7%) had mitral valve prosthesis, 34 (32.1%) had aortic valve prosthesis and 14 patients (13.2%) had double valve prosthesis. Fifty-three patients (50%) received warfarin throughout pregnancy and the rest switched to heparin in the first trimester. Cerebrovascular stroke occurred in 4 patients (3.8%), all were on the 1st trimester and all were taking heparins. The mean gestational age at delivery was 36.2±4.8 weeks and the mean fetal birth weight was 2435±791.5 gm. Thirty-three abortions were reported and the mean gestational age for abortion was 13 weeks±6 days while the mean gestational age for intrauterine fetal death was 29±4 weeks, table. Two babies had congenital heart diseases (ventricular septal defect and patent ductus arteriosus) and in both, the mothers were taking warfarin >5 mg/day during the second and third trimesters.

Conclusion: In this tertiary care centre, the incidence of maternal complications was relatively small while the incidence of fetal complications was high, especially in mothers taking higher warfarin doses. Switching to heparin in the first trimester increased the risk of systemic embolization.

Table (): Maternal and fetal complications

Complication	No. (%)
Maternal complications	
- Heart Failure	1 (0.9)
- Infective endocarditis	0 (0)
- Prosthetic valve dysfunction	0 (0)
- Systemic emboli	4 (3.8)
- New onset arrhythmia	0 (0)
- Antepartum hemorrhage	6 (5.7)
- Death	0 (0)
Fetal complications	
- Intrauterine growth retardation	9 (8.5)
- Intrauterine fetal death	9 (8.5)
- Abortion	33 (31.1)
- Oligohydramnios	4 (3.8)
- Polyhydramnios	5 (4.7)
- Congenital heart disease	2 (1.9)