

A Quality Improvement Project (QIP) Assessing the Safe Provision of Termination of Pregnancy to Women with Cardiac Disease: a retrospective study of 61 patients in a tertiary care centre.

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Background

After suicide, cardiac disease is the leading cause of maternal death in the UK ¹. There are around 250,000 adults living with congenital heart disease in the UK, half of which are women, and most of whom are within their reproductive years ¹. The physiological changes associated with pregnancy can cause significant cardiac strain in those with pre-existing cardiac conditions, and the risks associated with termination increase with advancing gestational age ^{1,2}.

Advancing medical and surgical practices are allowing more women with complex cardiac disease to reach their reproductive years, resulting in an increasing number of such women being referred to termination clinics. Despite this, there is very limited literature regarding the safe delivery of termination of pregnancy specifically for women living with cardiac disease, with no guidelines currently in existence ². This illustrates the importance of gaining a better understanding of how best to care for such patients and ensuring their safety is of the upmost priority.

Objectives

This study aims to begin to identify the safest methods of termination of pregnancy for women with complex cardiac disease, identify those at the highest risk of complications, and look at themes in the care in order to guide future practice.

Methods

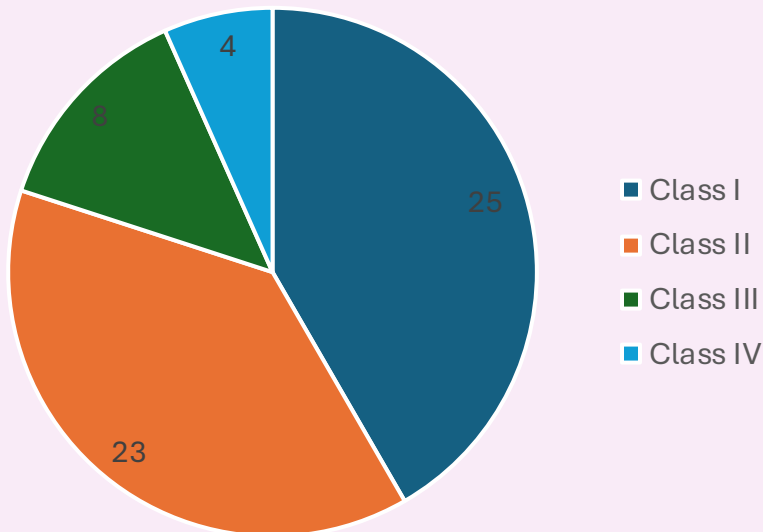
A database is kept at the tertiary centre where this study was based. Information included in the database is vast and this study focused on the following:

- Patient ID
- Age
- Date of referral
- Past medical history
- Parity
- Gestation
- Method of termination
- Complications

All patients with a cardiac history who were referred to the clinic between the 8th September 2022 and 7th March 2024 were included in this study, totaling to 68 people. 7 were excluded as didn't go on to have TOP.

Further information obtained from the patient's medical records included;

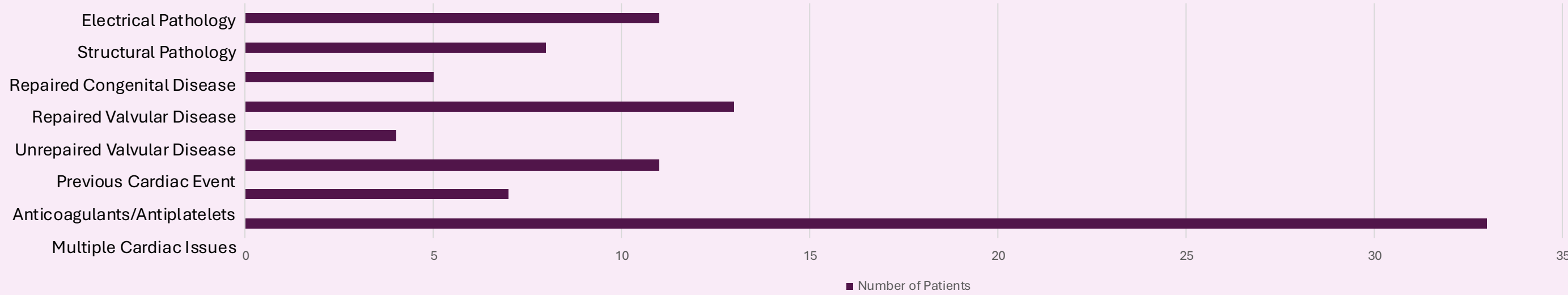
- Specific cardiac disease
- Indication for their termination
- Medications
- Anaesthetic type
- Estimated blood loss
- Length of stay following termination
- Details of any complications



The proportion of patients in each WHO risk classification of cardiac disease in pregnancy

Results

The majority of women with cardiac disease were in WHO classes I and II and included conditions such as arrhythmias, repaired congenital heart disease and mild structural anomalies such as ASD/ VSD. In these cases, patient choice was the biggest contributing factor to the type of termination they had. 66% chose medical termination and 33% opted for a surgical termination.



The number of patients with each type of cardiac disease

WHO class III patient characteristics:

Condition	Method	Gestation and parity	Complications
Previous cardiac arrest/ long QT	IP MTOP	14 weeks, P3	Only had misoprostol, failed MTOP, required STOP
Transposition of great arteries and mechanical valve	MVA in theatre	6 weeks, P1	Warfarin omitted overnight. EBL 200mls
Mod/sev Aortic stenosis/ dilated aorta	STOP	10 weeks, P0	
NSTEMI	STOP	7 weeks, P3	Clopidogrel stopped 2 days pre op
Dilated cardiomyopathy/ heart failure	IP MTOP	8 weeks, P1	
Hypertrophic cardiomyopathy	IP MTOP	18 weeks, P2	Retained placenta, removed surgically
Mechanical valve	MVA in theatre	10 weeks, P1	LMWH paused preop
Aortic stenosis and coarctation	STOP	10 weeks, P1	

Of the four patients in WHO class IV, 3 had cardiomyopathy, 1 had a mechanical aortic valve and aortic dilatation. 3 of them had a STOP/MVA. The remaining patient underwent a MTOP due to complex social issues necessitating faster access to the termination.

Discussion

This study found women with high-risk cardiac disease (WHO Class III and IV), are more likely to undergo a surgical termination of pregnancy. This is likely due to the ability to more closely control physiological functions, reduce the amount of blood loss, and to be equipped should an emergency arise.

Patients who have valve replacements are particularly high risk due to the added complexity of tightly controlled anticoagulation therapy. Close liaison with haematology colleagues to develop a personal anticoagulation plan is paramount. 3 of the patients with metallic valves in this study were switched from warfarin to a LMWH, which was omitted the evening before the procedure and restarted at a prophylactic dose 4 hours following the procedure. Full dose LMWH was restarted the following day, with haematology follow-up to phase back to warfarin.

Although the 2021 MBRRACE report suggests 'that women on warfarin may be more safely managed without transition to LMWH treatment when having an early TOP' this may not have filtered into standard practice or may have been converted to LMWH prior to the decision to terminate.

Furthermore, those with mechanical heart valves are more likely to require a general anaesthetic for the procedure to ensure optimal haemostatic control. If the patient opts for an MVA, this should be performed in theatre for a more controlled environment.

Retained products of conception only occurred following a MTOP in this group and these patients required further surgical management to complete their termination.

This study marks only the beginning to a better understanding of how best to care for women with a complex cardiac history who are requesting a termination of pregnancy and further work is required before guidelines can be developed. We hope to add to these numbers for a wider scale assessment.



References

- ¹ Uebing A, Steer PJ, Yentis SM, Gatzoulis MA. Pregnancy and congenital heart disease. *Bmj*. 2006;332(7538):401-6.
- ² Gaba N, Arora A, Sikka P, Suri V, Vijayvergiya R. Termination of Pregnancy in Women With Cardiac Diseases. 2023.