Maternal, anaesthetic and neonatal outcomes of parturients with ischaemic heart disease.

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Introduction

Cardiac disease is the leading cause of maternal mortality in the United Kingdom. Ischaemic Heart Disease (IHD) contributes to 24% of maternal cardiac deaths as per the 2019 MBRRACE-UK report[1].

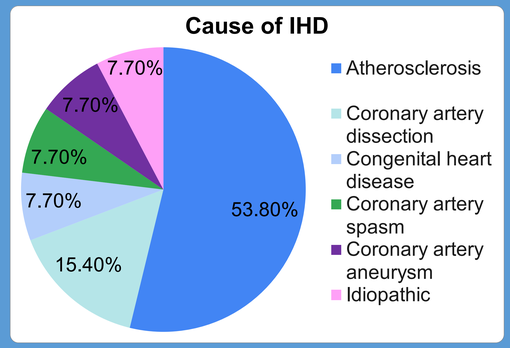
Method

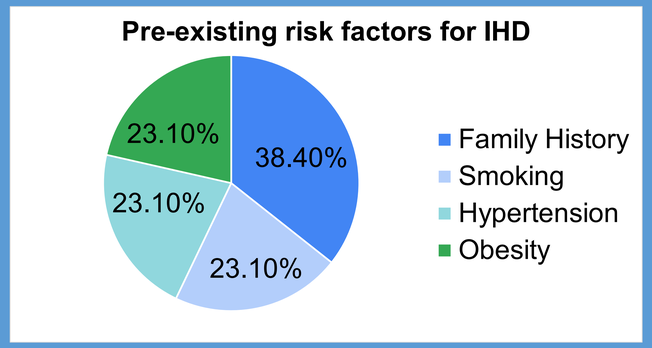
We retrospectively reviewed records of 13 parturients with a diagnosis of IHD at St Mary's hospital between 1 April 2015 to 1 April 2021.Our aim was to report the incidence of IHD in pregnancy the maternal outcomes, particularly mode of delivery, length of stay and postpartum haemorrhage rates. We also report on the analgesic/anaesthetic technique utilised during delivery and neonatal outcomes in this cohort. Results are expressed as a mean (+/-standard deviation) or as a number (proportion, %)

Results

In the study period our centre had 58,876, giving an incidence of IHD of 1 per 4528 maternities. Eleven (84.6%) patients had a pre-existing diagnosis of IHD and two (15.4%) were diagnosed in this pregnancy. Most patients (92.3%) were multiparous. Mean age was 31.8 (+/- 6.90) years and booking body-mass index (BMI) was 26.53 (+/-5.29) kg.m^2 Results depicting the maternal demographics, maternal, anaesthetic and neonatal outcomes are highlighted in the table and pie charts below.

Maternal Characteristics	Vaginal birth n = 3 (23%)	Caesarean birth n= 10 (77%)
Mean Age (SD)	24.3yrs (+/-6.4)	34.0yrs (+/-5.7)
Mean BMI (SD)	25.6 (+/-6.1)	26.8 (+/-5.3)
Multiparous	2	10
Gestation age at delivery (SD)	37.0 weeks (+/-1.1)	36.4 weeks (+/-2.58)
Anaesthesia Neuraxial General	N/A	 9 (90%) 1 (10%)
Analgesia Neuraxial Non-neuraxial	 2 (66.6%) 1 (33.3%)	N/A
Mean blood loss	266.6mls (+/-57.7)	580.0mls (+/-393.8)
Mean LOS	4.66 days (+/-0.58)	4.70 days (+/-2.83)





Cardiac History n = 13	
Diagnosis of IHD pre-pregnancy	84.6%
Diagnosis of IHD in current pregnancy	15.4%
Previous STEMI	61.5%
Previous NSTEMI	21.4%
Previous Coronary Artery Bypass Graft	15%
Previous Percutaneous Coronary Angioplasty	58%

Neonatal Outcomes n = 13	
Preterm birth (<37 weeks)	46%
Low birth weight (<2500g)	65%
Neonatal Intensive Care admission rate	23%

In three of the 13 patients, postpartum echocardiograms showed a reduction in ejection fraction in comparison to antepartum values.

Discussion

Our data on parturients with IHD highlight a high caesarean birth rate, high preterm birth rate, and low neonatal birth weight consistent with existing literature[2]. Factors contributing to the high caesarean birth rate are previous caesarean delivery (65%) and joint, multidisciplinary decision-making of the pregnancy heart team. Of some concern is the decline of ejection fraction post-delivery. Preconception counselling emphasising both maternal and foetal risks as well as serial inputs from a dedicated pregnancy heart team, and increased postpartum surveillance is mandatory and integral to limit maternal-foetal morbidity and improve outcomes in pregnant patients with IHD.

References

1. Knight M, Bunch K, Tuffnell D, Shakespeare J, Kotnis R, Kenyon S, Kurinczuk JJ (Eds.) on behalf of MBRRACE-UK. Saving Lives, Improving Mothers' Care - Lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2015-17. Oxford: National Perinatal Epidemiology Unit, University of Oxford 2019
2. Baris L, Hakeem A, Moe T, et al. Acute Coronary Syndrome and Ischaemic Heart Disease in Pregnancy: Data From the EURObservational Research Programme-European Society of Cardiology Registry of Pregnancy and Cardiac Disease. J Am Heart Assoc. 2020;9:e015490