Elective Caesarean Section Risk Scoring at Booking- Is there a Correlation with Theatre Time?

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Introduction

The Grange University Hospital opened in November 2020. This introduced dedicated elective caesarean section (ELSCS) lists to our health board. Other units have previously described a risk scoring system to minimise inefficiencies in theatre[1]. Therefore, we developed a local risk scoring system, from one to six, based on BMI, obstetric history and expected complexity of case. A max score of 12 per day and 6 per session was deemed appropriate.

Method

Data from a 20-week period since opening (2020-2021) was retrospectively retrieved from our Operating Room Management Information System (ORMIS). Primary time points reviewed were into theatre (INOR), knife to skin (KTS), surgical finish (CLOSE) and out of theatre (OUTOR). INOR-KTS and KTS-close times were taken as analogous to anaesthetic and surgical times retrospectively. This was cross referenced with documented booking risk scores in the ELSCS booking diary. The data was approved by the departmental audit committee and local Caldicott guardian.

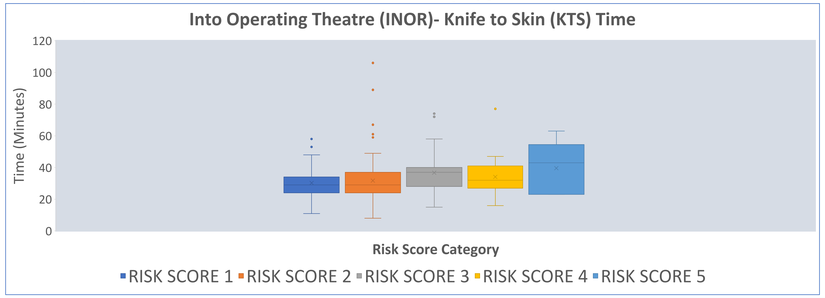
Elective Caesarean Risk Scoring

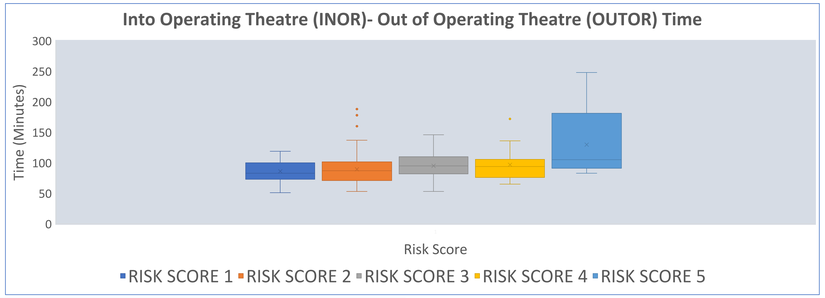
Breech **Maternal Request** **Gestational/ Type 1/ Type 2 Diabetes** **Previous 3rd or 4th degree tear** **Previous Traumatic Delivery** **Prematurity 34- 37 weeks** **Maternal Red Cell Antibodies requiring Cross Matched Blood**	**Patient Score= 1**
BMI >35-40 **Prematurity 28- 33+6 weeks** **Small or Clinically Significant Fibroids** **One Previous Caesarean Section** **Unstable/Transverse Lie**	**Patient Score= 2**
BMI >40-45 **Multiple Pregnancy** **Tubal Ligation/ Salpingectomy/Cystectomy** **X2 Previous Caesarean Sections** **Prematurity < 28 weeks**	**Patient Score= 3**
Previous Midline Laparotomy **Placenta Praevia** **High Risk Abdominal Adhesions** **BMI >45-50** **3X Previous Caesarean Sections** **Patient Declining Blood Products/Cell Salvage** **Spinal Injury Patient**	**Patient Score= 4**
BMI >50 **4 or More Previous Caesarean Sections**	**Patient Score= 5**
Placenta Accreta	**Patient Score= 6**

Results

	Risk Score 1	Risk Score 2	Risk Score 3	Risk Score 4	Risk Score 5
Number	81	117	59	17	5
INOR-OUTOR	83 [73-100]	87 [72-101]	95 [82-110]	94 [80-105]	105 [99-114]
INOR-KTS	29 [24-34]	29 [24-37]	37 [30-40]	32 [27-41]	43 [23-46]
KTS-CLOSE	43 [36-55]	45 [39-55]	48 [37-59]	41 [36-50]	52 [49-53]

Table 1. Comparison of Theatre times with risk scores. Data is median [+IQR]







Discussion

Risk stratification aims to prevent multiple high risk cases, prevent over-running of theatre lists and impact on emergency and out of hours care. Grange University Hospital is a newly opened critical care centre that has a designated elective obstetric theatre within its model. Over the period analysed, a total of 279 elective caesarean sections were conducted. Our data shows a positive correlation between risk score, anaesthetic, surgical and total case time. The only group that demonstrated statistical significance was the KTS-CLOSE between Risk Score 1 and Risk Score 5. This is likely multi-factorial but low overall case numbers particularly in the high risk groups is a likely explanation. Risk Scoring these women at booking has allowed us to efficiently plan our elective services with the potential to highlight these high risk women early to ensure necessary resources are available within the elective theatre setting.

References

1. Robertson K, Clacey J, D'Arcy R, et al. ELECTIVIST: a novel system to improve elective caesarean section booking. BMJ Open Quality 2018;**7**:e000350. doi:10.1136/ bmjoq-2018-000350