An audit of Intrauterine Fetal Resuscitation measures at the Ayrshire Maternity Unit (AMU)

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Introduction

Intrauterine resuscitation involves the application of specific measures to a mother in active labour with the intention of improving oxygen delivery to the compromised fetus. These measures include, full left lateral tilt, high flow oxygen, 1000ml crystalloid fluid bolus, discontinuation of syntocinon, tocolysis and the use of Vasopressors if maternal hypotension is evident.

The goals of intrauterine resuscitation are to:
- Optimize the fetal condition in utero, so that labour may continue safely for normal delivery.
- Improve fetal well-being prior to emergency operative delivery.
- Buy time to allow for a regional technique rather than general anaesthesia for caesarean section.
- Help stabilise a labouring women with fetal distress during transfer to hospital.

The Obstetric Association of Anaesthetists has published several hospital intrauterine resuscitations guidelines on their website. There is currently no guideline on the use of intrauterine resuscitation measures at the Ayrshire maternity unit. This Audit investigated the frequency in which intrauterine resuscitation measures were applied when evidence of fetal compromise existed at the AMU, with the aim to produce a simple departmental guideline on their application.

Methods

All Caesarean Sections performed under General Anaesthetic between January and November 2013 were retrospectively analysed. The indication for general anaesthetic was documented and analysed. Those Caesarean Sections undertaken due to fetal compromise (Category 1) were reviewed and evidence of intrauterine resuscitation documented. Time from decision for Caesarean Section to knife to skin and baby APGAR scores at time 1 and 5 minutes were also documented. A comparison of these values made between patients who received at least 1 Intrauterine resuscitation measure and those that did not receive any.

Results

Seventy-nine caesarean sections were performed under general anaesthetic at the AMU between January and November 2013. Of these, information was collected on 65 patients. Thirty-two were classified as a Category 1 caesarean sections and had evidence of fetal distress on either CTG monitoring or fetal blood sampling prior to delivery.

Methods

Graph 1. Indication for Caesarean section Under General Anaesthetic

Methods

Results

Graph 2. Number of intrauterine measures delivered compared to those applicable to receive the specific measures.

Table 2. Mean knife to skin times (mins) and baby APGAR scores in the intrauterine resuscitation and non resuscitation groups.

Table 3. Intrauterine resuscitation guideline for AMU

Discussion

There are no current guidelines on the use of intrauterine resuscitation for fetal compromise at the Ayrshire Maternity Unit. As a result, these manoeuvres are not routinely practiced. Evidence suggests these simple measures can improve fetal oxygen saturations and in some circumstances may prevent the need for a "crash GA section". They may also buy time to stabilize both mother and fetus and allow for a regional technique to be employed reducing the risks associated with emergency caesarean section under general anaesthetic.

Concerns with the use of intrauterine resuscitation include delays in getting the patient to theatre whilst resuscitation measures are being instigated as part of the preparing the patient for theatre.

As a result of this audit, a new guideline outlining how to perform intrauterine resuscitation has been produced for the Ayrshire Maternity Unit and the implementation of these manoeuvres will be prospectively audited in the future.

Appendix 1. Intrauterine resuscitation guideline for AMU


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References

2. PILOTS APPROACH
- Pressure: epidural 3-5mg bolus if systolic <100mmHg
- Intrauterine resuscitation: measures may help to improve fetal oxygenation and can be instigated whilst preparing the patient for theatre. They can, in some circumstances allow time for epidural top-up or spinal to be inserted for Caesarean section.
- Oxygen - 10-15l/min via a tight fitting Hudson mask.
- Tocolysis - 20mg intravenous 5U of 5U of tolbutamide.


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