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NICE and warm on the labour ward

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Introduction

NICE guidelines on inadvertent perioperative hypothermia (1) focus on prevention and management in the general population. Recognised adverse outcomes include discomfort and shivering, to more serious consequences such as increased blood loss, increased metabolic demands and cardiac events (2)

There is no specific guidance on management of hypothermia in the obstetric population. This is particularly important given the high proportion of cases involving regional anaesthesia plus the additional risks including neonatal hypothermia, increased blood loss (key in the context of post partum haemorrhage) and reduced maternal bonding.

The current standards are summarised below:

Pre-op	Intra-op	Post-op
▪ Identify high risk patients ▪ Measure core temperature ▪ Encourage patient to walk to theatre ▪ Only transfer to theatre if temperature is above 36 unless clinically urgent	▪ Active warming for all high risk patients (any duration) ▪ Active warming if low risk and duration over 30 mins ▪ Ensure ambient theatre temp is 21 ▪ Warm IV fluids ▪ Humidify respiratory gases ▪ Record temp every 30 mins	▪ Measure in PACU on admission and then every 15 mins ▪ Keep warm and comfortable for 24 hours

Methods

Data were collected over a three-week period starting in December 2020 on the labour ward. All obstetric associated surgeries were included.

We assessed:

- patient temperatures pre- and post theatre,
- whether were high risk (2 or more of: ASA grade 2-5, starting temp <36, combined GA and RA, major or intermediate surgery, low BMI and risk of cardiovascular complications)
- length of surgery,
- type of anaesthetic
- blood loss
- Consequence to mother and baby.

References:
1) NICE guideline. Hypothermia: prevention and management in adults having surgery, 2016
https://www.nice.org.uk/guidance/cg65/resources/hypothermia - prevention-and-management-in-adults-having-surgery-pdf- 975569636293

2) Villamiel LM. Help! This postanaesthesia care unit patient is hypothermic. J Post Anesth Nurs 1990 Apr;5(2):75-9

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Results

Audit forms were completed for 30 cases. 11 were elective (Cat 4) LSCSs, 11 were emergency LSCSs (Cat 2-3) and 8 were Trial of forceps or repair of perineal tears. 3 cases were performed under GA (1 Cat 2 section, 1 Cat 3 section and 1 EUA). 4 cases had to be excluded as either a pre-theatre or post-theatre measurement was missing. 88% of cases were performed under regional anaesthesia and 12% under general anaesthesia.

Of the fully completed forms, 100% of cases had a temperature>36.0°C pre and post theatre and did not require any intervention. No temperatures were taken in theatre.

- The average temperature pre-theatre was 36.77°C and post-theatre was 36.53°C.
- All cases took longer than 30 minutes (Figure 1)
- Average EBL was 452 ml (Figure 2)

Figure 1: Time spent in theatre

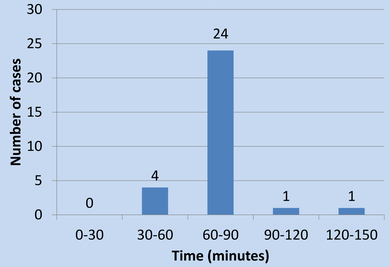
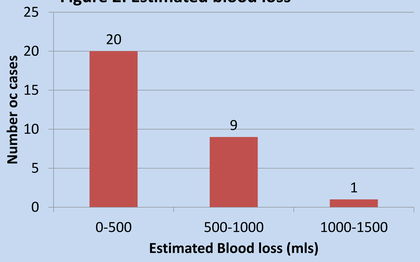


Figure 2: Estimated blood loss



Discussion

It can be seen that 4 cases out of 30 were excluded for a missing temperature recording, giving a compliance rate of 86%. While none of the remaining women had temperatures below 36 ^{0}C, this is in the context of higher physiological baseline temperatures in labouring women, particularly when epidurals have been sited, and warmer ambient temperatures on the labour ward and theatres for neonatal welfare.

If comparing the NICE standards to the obstetric population, it can be seen that there are multiple caveats: pre-operatively, not all patients are able to walk to theatre, and clinical urgency necessitating transfer to theatre may preclude optimisation of a hypothermic patient. Furthermore, shivering may possibly be more apparent with regional anaesthesia in this group because of the addition of opiates to spinal and epidural anaesthesia , making patient reporting less reliable.

This highlights the need for specific guidance for both regional anaesthesia and in the general population, as any recorded drop in temperature below 36 ^{0}C potentially represents a larger change in core temperature. It can be argued that there should be a different normal temperature range for this group of patients to mitigate the consequences discussed previously.