Mismanagement of Induction/Augmentation Medications

Sector: Acute Care (Maternal/Newborn)

Intravenous (IV) oxytocin is one of the most common pharmaceutical labour induction and augmentation agents used worldwide. Due to its heightened risk of causing significant harm in labour, IV oxytocin was added to the Institute for Safe Medication Practice (ISMP)'s list of “high-alert medications”. Accepting orders for IV oxytocin in the presence of contradictory clinical scenarios and not turning off the infusion in the presence of non-responsive abnormal fetal status are common findings in related Canadian maternal/newborn-related claims.

COMMON CLAIM THEMES

- Normalizing and/or decreased vigilance towards IV oxytocin (i.e. not treated as a high-alert medication).
- Lack of awareness of and/or compliance with hospital/health region induction/augmentation guidelines.
- Multiple gaps in fetal heart rate (FHR) monitoring, negatively impacting the safe use of IV oxytocin.
- Lack of standardized and evidence-based induction/ augmentation protocols.
- Verbal orders and informal consultations for induction/augmentation (i.e. routine practice vs. rare occurrence).
- Induction/augmentation initiated in the absence of an order and in-person physician assessment.
- Use of medical directives delegating the decision to induce/augment to nurses.
- Accepting/not questioning orders despite concerns about their clinical appropriateness.
- Infusion rate not reduced or discontinued in the context of maternal or fetal contraindications (uterine tachysystole, satisfactory uterine contractility or abnormal FHR).
- Resuming oxytocin infusion at an inappropriate rate following discontinuation.
- Poor patient handoffs (breaks and shift change).
- IV pump set-up errors.
- Delayed physician notification or consultations of unresolved uterine tachysystole, signs of uterine rupture and/or abnormal FHR pattern.
- Lack of documentation of:
  - The time the note was made, the nurse’s or midwife’s initials and their rationale for accepting, increasing or continuing the infusion in the presence of uterine tachysystole, satisfactory uterine contractility or abnormal FHR pattern;
  - Verbal orders/consultations for induction/augmentation, including orders to continue, increase or resume.
CASE STUDY 1

A G3P2 patient’s labour was augmented by IV oxytocin. The rate of infusion was increased three times over a 60 minute period before the FHR became difficult to detect. While an emergency C-Section was performed the infant sustained long-term brain damage. Experts were not supportive of the physician’s decision to order augmentation as well as the nurse’s decision to accept the order and increase the rate of infusion as the patient’s uterine contractions were recorded prior to and throughout the augmentation as being strong and frequently occurring. The experts were also critical of the nurse’s decision to increase the rate of infusion to a higher rate than prescribed by hospital protocol, delays in turning off infusion and notifying the most responsible practitioner (MRP) in the presence of a tachysystole of the uterus and loss of the fetal heart rate. It was also suggested that a communication breakdown between the primary and relief nurse during the augmentation contributed to a delay notifying the MRP.

CASE STUDY 2

A G1P0 maternal patient underwent IV augmentation due to slow progress of labour. Oxytocin was ordered and implemented ‘as per protocol’. Within a couple of hours, minimal FHR variability and decelerations were encountered however the infusion continued. Ultimately a STAT C-Section was performed and the infant sustained permanent neurological sequelae. Experts were not supportive of the nurse’s decision to not turn off the oxytocin, hesitancy to challenge or escalate concerns surrounding the physician’s order to continue with augmentation in the presence of ongoing abnormal FHR patterns and questioned whether the nurse ‘blindly followed’ orders. The nurse’s concerns were not recorded in the health record or brought to the attention of the physician or team lead. Review of the case indicated the nurse hesitated to voice concerns as the physician was constantly in the room, and felt the call for the C-Section was imminent.

REFERENCES

- HIROC claims files.
- Perinatal Services BC. (2011, May). Guidelines for registered nurses – core competencies and decision support tools: Management of labour in an institutional setting if the primary maternal care provider is absent (2nd ed).
**Reliable Care Processes**

- Adopt standardized induction/augmentation dosing protocols or order sets, including starting dose and incremental increases, and the defined rate (or range) of infusion at which to resume oxytocin after discontinuation.

- Adopt standardized algorithms/clinical pathways to guide clinical decision making when ordering, initiating and monitoring during induction/augmentation, including:
  - Indications for the immediate reduction or discontinuation of the infusion without notifying/consulting the ordering/on call physician;
  - Use of standardized ‘pre-oxytocin’ and ‘oxytocin in-use’ checklists.

- Require an in-person physician assessment of the patient and a written order before an order for induction/augmentation is implemented and before restarting or increasing the rate of infusion in the presence of maternal or fetal contraindications (e.g. uterine tachysystole and abnormal FHR patterns); prohibit the use of induction/augmentation ‘standing orders’ and medical directives.

- Maintain an environment which supports the questioning and challenging of induction/augmentation orders.

**Documentation**

- Ensure complete and timely nursing and midwifery documentation of physician consultations and orders for induction/augmentation (e.g. name of the ordering/consulting physician; date/time the order/consult took place; the fetal status and risk factors relayed at the time of discussion/consultation; the findings and recommendations; changes to the birth plan/management plan).

- Ensure complete and timely nursing and midwifery documentation of the rationale for accepting an order, continuing or increasing the rate of infusion in the presence of maternal or fetal contraindications (‘as per protocol’ or ‘as per orders’ is not sufficient).

**Training**

- Offer interdisciplinary/team based educational sessions on induction/augmentation medications (e.g. dosing regimens, intervals between rate increases and impact on fetal reserves).

**Monitoring and Measurement**

- Implement formal strategies to monitor:
  - Frequency and impact of oxytocin-induced uterine tachysystole;
  - Non-compliance with in-person assessment and written order requirements for pharmaceutical induction/augmentation;
  - Perinatal harm incidents involving induction/augmentation medications (e.g. chart audits/trigger tools, incident reports, team debriefs, quality reviews);
  - Compliance with ‘pre’ and ‘in-use’ oxytocin checklists and induction/augmentation ‘bundles’ (where bundles are used).