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ANALGESICS AND ANAESTHESIA

Introduction

Pain is a highly subjective experience. Pain is whatever the client says it is. The amount and type of pain experienced during labour vary widely from person to person. During labour different types of pain arise from different sources. As the uterus contracts and the cervix dilate, the client feels visceral pain as described persistent, aching, or spreading. The pain may be localised to the abdominal region or felt in the lower back, hips or thighs. Some women describe generalised aching throughout the body. This type of pain is intensified by fatigue. Another type of pain sensation is caused by pressure of the descending fetus as it stretches the birth canal. This type of generalised body pain is called somatic pain described as intense pressure or need to bear down, is typically most intense during the transition phase of the first stage of labour and during the second stage of labour. Analgesia is the use of medication to reduce the sensation of pain.

Parenteral and Inhalational Analgesia

Parenteral narcotics: Pethidine is the most frequently used narcotic given intramuscularly. It is administered in a dose of 50mg to 100mg intramuscularly with 2 to 4 hours interval. Alternatively it can titrate intravenously to effect in the presence of severe pain for a rapid response. Morphine can also be administered but it is not frequently used as the neonatal respiratory depression and maternal nausea and vomiting associated with morphine are more severe.

Inhalational analgesia: Nitrous oxide is the main inhalational anaesthetic that is used for obstetric analgesia. It is used mainly in a 50:50 combination with oxygen. It is delivered with a demand valve and there will not be any flow from the system unless are inspiratory effort is made with the mask properly sealed on the face. It may produce light headedness and nausea. It is suitable for use

when the mother is in severe pain especially during late whilst waiting for the effects of other methods to take their effects.

Regional Analgesia

Regional analgesia is the most effective method of providing labour analgesia for the mother currently available and is more costly and need the services of an anaesthetist in their administration and maintenance.

1. **Epidural analgesia :** This involves the administration of a diluted amount of local anaesthetic either in the form bupivacaine combined with a low concentration of short acting narcotic like fetanyl, through a catheter placed in the epidural space and administered either in the form of bolus doses by a doctor or nurse.

2. **Combined spinal epidural (CSE) analgesia:** This technique is fairly similar to an epidural except that after the epidural needle is an in the epidural space, a long spinal needle is placed through this needle to the intrathecal space. The CSE set is more expensive compared to an epidural set.

3. **Spinal analgesia:** This method which involves the administration of a small amount a local anaesthetics and narcotic into the intrathecal space as a bolus dose is not frequently used for labour analgesia. The local anaesthetic provides only 1 to 3 hours of pain relief which may not be adequate to cover pain toward the end of the first stage or second stage Complications Complication can arise from these methods in the form of hypotension, spinal headaches, and convulsions, peripheral or central neurological damage.

Anaesthesia

Anaesthesia is the use of medication to partially or totally block all sensation to an area of body. It may loss of normal sensation, and sometimes in loss of consciousness.

Local infiltration: It is the least extensive form of anaesthesia and presents the lowest risk to the mother and fetus. It is administered by direct injection of the anaesthetic agent, such as lidocaine, into the perineal tissue surrounding the area where the episiotomy will be made. Local anaesthesia is performed immediately before the delivery and blocks sensation long enough for the delivery and for repair of the episiotomy. The most side effects are hypotension, dizziness, palpitations and headache, tachycardia or tremors.

Regional Anaesthesia

Regional anaesthesia blocks a nerve or group of nerves without causing loss of consciousness. This form of anaesthesia allows the women to remain alert and be able to participate in the delivery. Regional forms of anaesthesia are most commonly recommended by health care providers and chosen by expectant. It includes paracervical, pudendal, epidural and spinal blocks.

Paracervical Block: Paracervical Block prevents impulse transmission from the lower segment of the uterus surrounding the cervix. It is accomplished by injecting a local anaesthetic transvaginally adjacent to the outer rim of the cervix. It may be administered during the active phase of labour, achieving rapid and complete relief of uterine pain during cervical dilation. It does not block pain impulses from the vagina or perineum and does not interfere with the bearing down reflex. It is used infrequently. Pudendal Block Pudenda Block prevents impulse transmission through the pudendal nerves, which transmit impulses from the perineum. The pudendal nerve is located near the lower margin of the Ischia spines. Injection of the pudendal nerves is accomplished by

the transvaginal route. A long needle, with or without a protective guide (sometimes called a trumpet), is used to instill medication around the nerves on each side of the body. The pudendal block is given within a few minutes of delivery and results in relaxation of the muscles of the perineum thus hastening delivery. It also blocks pain Transmission when episiotomy is performed and repaired.

Epidural Block: Epidural anaesthesia results in loss of sensation from the lumbosacral region of the spinal cord by blocking impulse transmission from major nerve roots located outside the duramater. While the pain impulses are blocked by epidural anaesthesia, sensation of manipulation or pressure can still be detected by the women. It administered by the epidural route affects the lower trunk and legs; therefore it can be used during labour and during either vaginal or caesarean delivery. Epidural anaesthesia is accomplished by insertion of a needle or catheter into the epidural space and medication is inserted through the needle or catheter so that it can flow around the duramater and may be administered as a single dose shortly before delivery. The site of insertion will vary based on the type of epidural selected. In the lumbar epidural the needle or catheter is inserted into the space between vertebrae L4 and L5 using surgical aseptic technique.

Spinal Block: Spinal anaesthesia causes loss of sensation to the lower trunk and lower extremities by blocking transmission of nerve impulses from major nerve roots located within the subarachnoid space of the spinal column. It is not typically used for vaginal delivery but is reserved for caesarean delivery. It is administered using a procedure similar to that used in a spinal tap.

General Anaesthesia

General anaesthesia is administered intravenously or by inhalation. Medications used for general anaesthesia given by inhalation include the gases nitrous oxide,

halothane, enflurane, and isoflurane. Intravenous medications used for include ketamine and thiopental sodium. General anaesthesia is not common because of the risks it presents to both the mother and fetus. It may be used for routine caesarean sections but is less desirable than spiral anaesthesia. It may be required in emergency situations when rapid administration of anaesthesia is essential or in cases where a regional anaesthesia is contraindicated because of other medical conditions such as infection, malformation of the spinal column.

When general anaesthesia is anticipated, the woman is given supplemental oxygen before surgery in order to increase the oxygen saturation level. An intravenous line is established so that there is direct access to the vasculature. The intravenous line is used to administer anaesthetics for induction and to provide immediate access for any other medications that may be needed.

All parturient for caesarean section, more so those who have undergone a period a labour and given narcotic parenterally are considered to have "full stomach" as they have delays in gastric emptying. These when aspirated whilst they are rendered unconscious during the administration of a general anaesthesia can give rise to consequences that can threaten the mother's life. Hence, general anaesthesia for caesarean section whether in an elective or emergency situation involves a "crash induction" which is the administration of an induction agent together with a very rapid- acting muscle relaxant whilst cricoids pressure is applied before the endotracheal tube is inserted and its cluff inflated.

Types of General Anaesthesia

Nitrous oxide: The anaesthetic, which is 40 percent nitrous oxide and 60 percent oxygen, is administered by facemask or inhaler. Its induction is fast and pleasant and it is non-irritating, on-explosive and less disruptive of physiological functions than any other general anaesthetic. Its main use is in the

second stage of labour, as an induction agent or as a supplement to more potent general anaesthesia.

Halothane (Halothane): Not used as frequently as nitrous oxide, halothane nevertheless bears mention for obstetrical anaesthesia. Its induction is rapid, predictable and safe, since it causes little or no nausea or vomiting. It provides moderate to good uterine relaxation, although it may cause respiratory depression as well as irritability of cardiac tissue, which can result in arrhythmia. It may also cause increased uterine contraction along with the risk of postpartum haemorrhage.

Methoxyflurane (Penthrane): Administered by inhaler for analgesia, or in combination with otherwise agents for anaesthesia, methoxyflurane induction is pleasant but slower than with gas agents. Uterine contraction may result from its use, and administration is restricted to low doses for short periods because of the risk of postpartum bleeding.

Thiopental sodium (Pentothal): This ultra short acting barbiturate is given intravenously and it produces narcosis within 30 seconds. Induction and emergence are smooth and pleasant, with little nausea or vomiting. It is most frequently used for induction or as an adjuvant to more potent anaesthetics.

Roles And Responsibilities of Nurse Midwives

- Know and comply with the state laws and regulationsk6mn regarding prescribing of medications.
- Know and comply with the state nurse practice act related to medication prescribing authority.
- Limit access to prescription pads and notify local Pharmacies and the drug enforcement agency if blank prescriptions are stolen.

- Limit telephone refills to one prescription and require the patient to come in and be seen before providing additional telephone refills, Avoid refilling narcotics and pain medication telephone and outside of regular office hours.
- Perform peer review of the prescribing practices licensed independent practitioners and obtain addition education and expertise as needed.
- Maintain drugs in a safe area with limited access and if appropriate or required by law, under lock and key
- Store drugs at manufacturer's recommended temperature
- Store drugs in a separate location away from food or other materials or supplies
- Avoid storing similar looking drugs near one another
- Avoid keeping drugs with similar sounding names of the formulary, but if such similarities do occur, provide adequate additional warnings on packaging.
- Regularly check drug expiry dates and properly discard/destroy expired drugs prescribing medications .
- Know the appropriate indications, dosage range routes) of administration, contraindications, side effects, and warnings related to the drugs prescribed.
- Maintain readily available, current drug reference materials and refer to them whenever there are questions regarding a drug or when prescribing a drug that is not frequently prescribed
- Maintain access to resources that provide clinical information on drug interactions.