Chapter 13: Pain Medications

Common Medications Used for Pain Relief during Childbirth

In the following charts, medications are listed with their generic (chemical) names first, followed by their brand names in parentheses. For all medications, effects and side effects vary, depending on the drug used, total dosage, timing, fetal condition, and the mother's individual response.

Systemic Medications for Labor Pain and Distress

Type and timing	Drugs used	Benefits and/or purposes	Possible risks and/ or disadvantages	Additional precautions/ procedures/interventions
Sedatives/barbiturates given by injection or pill early labor only	secobarbital (Seconal) pentobarbital (Nembutal) amobarbital (Amytal) phenobarbital (Luminal)	In smaller doses, they have a sedative effect: reduce anxiety, irritability, and excitement. In larger doses, hypnotic: induce rest, relaxation, or sleep. They may be used to give the mother a rest by decreasing contractions in a slow, painful prelabor.	*To mother:* Large doses may cause dizziness and disorientation and can slow labor by impairing uterine activity. *To baby:* May cause heart rate changes. May accumulate in fetal tissue and cause respiratory depression (very slow breathing), decreased responsiveness, and impaired suckling in the newborn.	*Note:* Rarely used today because of undesirable side effects. Should be used before 4 cm dilation. Should be discontinued before active labor to reduce effects on newborn. Oxygen and resuscitation equipment on hand if baby is born soon after barbiturates are given.
Tranquilizers given by injection or pill early labor and after cesarean	*Phenothiazines:* promethazine (Phenergan) prochlorperazine (Compazine) hydroxyzine (Vistaril or Atarax) *Benzodiazepines:* diazepam (Valium)	Used to reduce tension, anxiety, nausea and vomiting. Sometimes combined with narcotics to enhance the effects of lower doses of narcotics (thus reducing narcotic side effects). Benzodiazepines are not used for labor because of risks to the baby. They are sometimes given after cesarean birth to reduce anxiety during the repair.	*To mother:* May cause drowsiness, dizziness, blurred vision, confusion, dry mouth, changes in blood pressure and heart rate. When given with barbiturates or narcotics, may increase their effects. *To baby:* Phenothiazines can inhibit newborn reflexes and cause jaundice.	Should be discontinued before active labor to reduce effects on newborn. Oxygen and resuscitation equipment on hand if baby is born soon after these are given. Observation for and treatment of newborn jaundice.
Inhalation analgesia[1] self-administered by mother, who holds an oxygen mask to her face and inhales the medication as needed late labor or for brief painful procedures	nitrous oxide and oxygen (Entonox) or flurane derivatives	Takes effect almost immediately. Causes mother to feel drowsy, lightheaded, or giddy for about a minute. Does not take away pain, but mothers are less troubled by it.	*To mother:* Some enjoy the mental effects, some do not. Nausea, vomiting, drowsiness and dizziness for some women. *To baby:* Little effect.	Confinement to bed. Mother should begin inhaling just before a contraction begins, so medication is in effect when contraction is at its peak. Rare in the United States. Common elsewhere.

Systemic Medications for Labor Pain and Distress

Type and timing	Drugs used	Benefits and/or purposes	Possible risks and/ or disadvantages	Additional precautions/ procedures/interventions
Narcotic or narcotic-like analgesics given intramuscularly (a shot), or intravenously, by direct injection, or injection into an IV line; sometimes, patient-controlled analgesia (PCA) device is used in early to active labor, when it's believed that the birth is at least 2 hours away also after cesarean birth	morphine fentanyl (Sublimaze) remifentanil (Ultiva) meperidine (Demerol) butorphanol (Stadol) nalbuphine (Nubain) (Stadol and Nubain are combination drugs—a narcotic plus a narcotic antagonist, which reduces some of the narcotic's undesirable side effects.)	During active labor, reduce pain awareness and promote relaxation between contractions. Some may indirectly speed a labor that has been slowed by tension and stress. Large doses of narcotics (especially morphine) are sometimes used in a prolonged prelabor in hopes of stopping contractions and giving the mother a rest.	*To mother:*[2] May cause drowsiness, "high" feeling, hallucinations, dizziness, itching, nausea, vomiting, and slowing of digestion. May slow heart rate and lower blood pressure. Narcotics often interfere with clear thought and the use of self-help comfort measures. Narcotics may temporarily slow labor progress, especially if the medication is given before the active phase of labor. *To baby:*[3] May make fetal heart rate readings appear abnormal, depress the newborn's respiration, and alter the baby's muscle tone behavioral responses (for example, poor suckling) for several days unless narcotic antagonist is given.	Usually, restriction to bed. Continuous monitoring of fetal heart rate and maternal blood pressure. Reminders to mother to breathe deeply, help her stay oriented. Maternal position changes or oxygen to improve FHR abnormalities. Should be discontinued at least 2 hours before birth to reduce effects on newborn. Oxygen and resuscitation equipment on hand if baby is born within 4 hours after narcotics are given. Narcotic antagonist for mother or baby, if necessary, to reverse side effects.
Narcotic antagonists given by injection into muscle or vein if needed to reverse narcotic side effects on mother or baby	naloxone (Narcan)	Reduce narcotic effects, such as hallucinations, itching, respiratory depression (very slow breathing), and low blood pressure. Narcan is given by injection to the laboring woman if there is narcotic toxicity or to the newborn when there are respiratory problems caused by narcotics.	*To mother and baby:* Abrupt reversal of narcotic depression may result in rapid heart rate, increased blood pressure, nausea, vomiting, sweating, trembling, and the return of pain awareness. The effects of narcotics may return if narcotic antagonist wears off before the narcotic.	Continued observation of mother or baby for return of narcotic side effects. Repeated dose of narcotic antagonist as needed.

Local Anesthetics for Labor, Delivery, and Repair

Type and timing	Drugs used/ who administers	Benefits and/ or purposes	Possible risks and/ or disadvantages	Additional precautions/ procedures/interventions
"Local" perineal block given by injections around the vaginal opening second stage, before episiotomy third stage for repair of episiotomy or tear	often lidocaine (Xylocaine) can be given by midwife or physician	Numbness in perineum. Relief of pain of crowning, episiotomy, or stitching after birth.	*To mother:* Sting of injections. If given during second stage, may increase swelling in perineum and likelihood of tears. *To fetus/newborn:* Minimal to none.	
Paracervical block given by injections into both sides of cervix between 5 and 9 cm dilation	mepivacaine (Carbocaine) lidocaine (Xylocaine) chloroprocaine (Nesacaine) can be given by obstetrician or family physician	Removes pain due to dilation of cervix and pressure in lower segment of uterus. Awareness of contractions remains.	*To mother:* Drop in blood pressure *To fetus/newborn:* Can cause fetal distress (drop in heart rate), reduced muscle tone in newborn, newborn fussiness, decrease in some reflexes.	*Routine:* Intravenous (IV) fluids. Close monitoring of mother's blood pressure, blood oxygen levels, and fetal heart rate. Mother needs larger drug dose for paracervical than for epidural, leading to more severe side effects for the fetus, but much less pain relief. Thus, rarely used.

Local Anesthetics for Labor, Delivery, and Repair				
Type and timing	**Drugs used/ who administers**	**Benefits and/ or purposes**	**Possible risks and/ or disadvantages**	**Additional precautions/ procedures/interventions**
Pudendal block given by injections into both sides of vagina to block pudendal nerves second stage	same as paracervical block	Numbs vagina and perineum. Reduces pain during delivery, especially if forceps or vacuum extraction is used.	*To mother:* May impede bearing-down reflex and effectiveness in pushing. May relax muscle tone in perineum enough to impede fetal rotation. *To fetus/newborn:* Similar to paracervical block.	*Routine:* Fetal monitoring. Rarely used, except with forceps delivery.

Neuraxial Medications for Labor and Vaginal Delivery[4]				
The anesthetic is usually one of the "caine" drugs—bupivacaine (Marcaine or Sensorcaine), ropivacaine (Naropin), or levobupivacaine. Narcotics or narcotic-like drugs that may be used include morphine (Duramorph), fentanyl (Sublimaze), and sufentanil (Sufenta).				
Type and timing	**Drugs used**	**Benefits and/ or purposes**	**Possible risks and/ or disadvantages**	**Additional precautions/ procedures/interventions**
Spinal narcotic analgesia spinal injection early to active labor	narcotic only (a.k.a. intrathecal narcotics)	Similar to epidural narcotic, but takes effect more quickly. Lasts up to 2 hours.	Similar to epidural narcotic. Spinal headache (<1 percent).	*If spinal headache occurs:* Blood patch (a small amount of mother's blood is injected in epidural space near the dural puncture). Mother lies flat for hours or days.
Epidural narcotic analgesia epidural catheter 2 cm until transition also used after cesarean (first 24 hours)	narcotic only	Decreases perception of pain. Good relief of labor pain until 6–8 cm. After that, mother may need anesthetic. Affects ability to move safely. Some women can stand or even walk a bit, with assistance, if hospital policy allows this. Sensation other than pain (touch, pressure, temperature) remains. When compared to IV narcotics, more pain relief with less medication.	*To mother:* Often causes itching all over body. Frequently, nausea and vomiting. Feeling of weakness in legs or loss of balance while walking. May alter mental state, but less so than IV/systemic narcotics do. *To fetus/newborn:* Effects on newborn are similar to but milder than the effects of IV / systemic narcotics, due to lower dosage.	*Note:* Rarely done. Most modern epidurals combine anesthetic and narcotic. *Routine:* Restriction of food and drink. IV fluids. Assistance while standing. Checking muscle strength in legs before standing (hospital policies may not allow you to walk). Monitoring (see above). *Used as needed:* Additional medications to control itching and nausea (may make mother sleepy; may decrease pain relief).

Neuraxial Medications for Labor and Vaginal Delivery[4]

The anesthetic is usually one of the "caine" drugs—bupivacaine (Marcaine or Sensorcaine), ropivacaine (Naropin), or levobupivacaine. Narcotics or narcotic-like drugs that may be used include morphine (Duramorph), fentanyl (Sublimaze), and sufentanil (Sufenta).

Type and timing	Drugs used	Benefits and/ or purposes	Possible risks and/ or disadvantages	Additional precautions/ procedures/interventions
Epidural anesthesia only epidural catheter as early as 2 cm until birth some caregivers prefer to wait until 5 cm or later (the "light and late" epidural) to avoid slowing labor progress and minimize total medication	"caine" anesthetic only	Loss of pain sensation (numbness) in the abdomen and back. Reduced sensation in the legs and perineum. Relaxation and sleep, mental clarity. Can change positions in bed only with assistance.	*To mother:* Reduced mobility. Drop in blood pressure. Slowing of labor progress. Fever (chance increases with duration of epidural). Decreased urge to push, slower pushing stage, increased chance of malpositioned baby, more instrumental deliveries. Spinal headache if the epidural needle goes in too far. Secondary side effects from the procedures used to ensure safety (see next column). *To fetus/newborn:* Fetal heart rate changes (can be secondary to maternal fever or decreased blood pressure). Fever.	*Note:* Rarely done. Most modern epidurals combine anesthetic and narcotic. *Routine:* Restriction of food and drink. Intravenous (IV) fluids. Restriction to bed. Various devices to closely monitor mother and baby. *Used as needed:* Oxygen by mask. Pitocin to speed labor. Bladder catheter. Forceps, vacuum extraction, episiotomy, cesarean delivery. Blood patch for spinal headache (see below). *For newborn if mother had fever:* In special care nursery for 48 hours for observation and antibiotics. Septic workup looking for infection (includes blood culture and spinal tap).
Epidural with combination of narcotics and anesthetics epidural catheter active labor until birth	narcotic and "caine" anesthetic are mixed together and given through epidural	Compared to epidural anesthesia alone: slightly more pain sensation, more mobility. Compared to epidural narcotics alone: less pain, less mobility.	*To mother and fetus/ newborn:* Can experience milder cases of both the anesthetic effects and the narcotic effects described above.	Most common type of epidural for labor. Same as above.
Combined spinal epidural (CSE) spinal as early as 2 cm, anesthetic addition at 6–8 cm when "breakthrough" pain occurs	spinal narcotics given first, epidural anesthesia and narcotic combination given when needed	Same benefits as spinal narcotics followed by same benefits as epidural analgesia.	Similar to spinal narcotics, followed by epidural anesthesia, but fewer side effects, as the total amount of medication given is smaller.	See above. A spinal injection is given, and the epidural catheter is placed at the same time. Available at many university-based teaching hospitals. Much less common elsewhere.

Anesthesia for Cesarean

Type	Drugs used	Benefits and/ or purposes	Possible risks and/ or disadvantages	Additional precautions/ procedures/interventions
Epidural anesthesia epidural catheter	"caine" drugs, in a higher dose (concentration) than is given for labor if an epidural catheter was in place for labor, it can be used for this increased dosage if a cesarean becomes necessary	Total loss of pain sensation from chest to toes. May still feel some pressure or pulling during delivery, but no sharp pain. Provides excellent pain relief without impairing mental awareness.	*To mother:* Inability to move lower half of body. *To mother and baby:* Other side effects listed under epidural anesthesia for labor. Some effects may be more likely or more pronounced due to the higher dose given for cesarean anesthesia.	*Routine:* Restriction of food and fluids by mouth. Large amounts of intravenous (IV) fluid. Various devices to closely monitor mother's blood pressure, blood oxygen levels, heart function, temperature, contractions, and fetal heart rate. Bladder catheter. *Used as needed:* Oxygen by mask.
Spinal block spinal injection	"caine" drugs	Similar to epidural anesthesia. Can be administered quickly, takes effect almost immediately. Lasts a few hours.	*To mother:* Occasionally, feeling of being unable to breathe because chest becomes anesthetized. Drop in blood pressure. Spinal headache (1 percent). *To fetus/newborn:* Heart rate variations.	Same as above. *If spinal headache occurs:* Lie flat in bed for several days. Blood patch. *If breathing difficulties arise:* Assisted ventilation.
General anesthesia Step 1: Induction agents given intravenously Step 2: Inhalation agents given by inhaling a gas containing medication mixed with oxygen	*Induction:* thiopental sodium (Pentothal) methohexital sodium (Brevital) thiamylal sodium (Surital) ketamine (Ketalar) *Inhalation:* isoflurane (Forane) nitrous oxide (Entonox) enflurane (Ethrane) halothane (Fluothane)	Rapidly provide loss of sensation and consciousness. May be used for cesarean birth when speed is essential.	*To mother:* Causes respiratory depression (very slow breathing), lower blood pressure, and changes in heart rate. Large doses may reduce uterine activity. May cause nausea and elevated temperature. The most serious, though rare, risk is inhalation of vomited material, which can cause pneumonia and possibly death. (Chance of death is 7 in 10 million.) *To baby:* May result in respiratory depression, drowsiness, poor muscle tone, and low Apgar scores.	Antacid given to mother before receiving anesthetic. Intubation (tube in mother's windpipe) to protect against inhalation of vomited material. Monitoring of mother's breathing, pulse, heart function (on electrocardiogram or EKG), blood pressure, and blood oxygen levels (with pulse oximeter). Monitoring of baby and resuscitation, if needed. Used for 3 percent of planned cesareans, less than 15 percent of unplanned cesareans.5

Endnotes

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