

Labor Anesthetics

Biomedical engineers have devised medical methods for relieving labor pain — and some even eliminate most pain. Labor medications fall under certain categories. Drugs that relieve pain but do not cause a complete loss of sensation are known as analgesics. A systemic-analgesic affects the entire nervous system. Pain medications classified as anesthesia cause a loss of sensation, but do not cause a loss of consciousness unless the patient is administered a general anesthetic.

Inhalation Analgesics - Entonox: Although most inhalation drugs cause a patient to lose consciousness completely, one type, entonox, is effectively used in labor. Delivered through a mask fitted over the face, entonox is a mixture of oxygen and nitrous oxide that takes only about 45 seconds to take effect. However, since the pain relief is very temporary, it is best suited to helping a woman deal with her labor contractions. Because the nitrous oxide quickly leaves the body, there is little harm to the mother or baby.

Narcotics and Analgesics: The most common narcotics used during childbirth are fentanyl (Sublimaze), meperidine (Demerol), butorphanol (Stadol) and nalbuphine (Nubain). These drugs are administered either by injection into the thigh or buttocks, or by IV (intravenously). Effects last from two to six hours. One advantage of these drugs is that they are able to reduce the amount of pain felt without causing any muscle weakness, leaving the patient free to move about. However, they make her feel sleepy, cause her to have a decrease in labor memories, and may also depress respiration for mother and baby, although a temporary effect.

Epidural: Perhaps the best known labor medication, an epidural is a local anesthetic that can be combined with narcotics to numb the lower body. It can provide almost complete pain relief. Epidurals that contain narcotics help relieve pain while still leaving the patient some muscle strength to walk; these are known as “walking epidurals.”

The general procedure for an epidural involves inserting a catheter below the vertebrae into the dura (a tough sac that surrounds the spinal cord). If everything goes smoothly, a small amount of anesthetic is continuously pumped through the catheter to ensure total pain relief. It takes approximately 20 minutes to administer the epidural and another 20 minutes to take effect.

While some women have found that an epidural hinders their ability to bear down during delivery, for the most part, the use of an epidural has not been found to significantly slow down labor and delivery. Other complications can include a drop in blood pressure for mother and baby, fever and backache.

Spinal Block: An epidural alternative is a spinal block. While similar to an epidural, a spinal block is injected once, directly into the dura below the base of the woman’s spinal cord. A spinal block can provide pain relief from the chest down for up to two hours.

One advantage of a spinal block is that it is quicker to administer than an epidural. If labor is progressing rapidly, there may not be time to administer an epidural before birth. Another advantage of the spinal block is that the pain relief is almost immediate, compared to the 20-minute wait with an epidural.

Combined Epidural and Spinal Block: In some cases, both procedures are used by administering the spinal block through the catheter used for the epidural, so only one needle is inserted into the patient’s back. However, this method increases the risk of negative side effects.

Local Infiltration Anesthetics: Local infiltration anesthetics are pain medication used specifically to relieve the discomfort of an episiotomy, or when a tear is repaired after delivery. Administration of these types of drugs is usually done just before or after delivery. The pain medication is injected directly into the tissue surrounding the vaginal opening to numb the immediate area. While these anesthetics have few effects on the mother and baby, an allergic reaction is possible. Additionally, the drug provides no relief from uterine contractions. Moreover, if the medication is injected directly into a vein, it could cause a blood pressure drop.

Pudendal Block: Similar to a local infiltration anesthetic, a pudendal block involves having a drug injected directly into the vaginal walls shortly before delivery to numb the perineum. A pudendal block is useful when an episiotomy is to be performed, as well as in forcep-assisted or vacuum extraction deliveries. The effects of a pudendal block last anywhere from a few minutes to an hour. In addition to possibly decreasing the woman's urge to push, this type of anesthetic also shares the same disadvantages as a local infiltration anesthetic.

Your tasks for this activity are:

- Review the vocabulary handout to familiarize yourself with any unknown vocabulary words used in this description of labor anesthetics.
- Decide how to communicate this information to your class in an effective way. You may include all information or only the relevant highlights from what you learned in this handout.
- In your presentation, communicate the advantages and disadvantages of this technology. You will want to discuss this as a group. Mention your suggestions for further improvements to the technology.
- Your presentation must include at least one visual element (more than just reading / lecturing to the class), such as a drawing, graphic, picture, table, graph, chart, skit, song, poem, demo.

Source: Medications for Labor, Labor and Birth. Pregnancy-Info.Net. Accessed February 17, 2009.
http://www.pregnancy-info.net/labor_medication.html