Epidural Analgesia in Labor

Epidural analgesia is one of the most advanced methods used for labor pain relief. At our maternity hospital, it is a well proven and the most frequently used method.

The following text provides some basic information on this method.

**Key words:**

Analgesia: pain mitigation, pain relief, painlessness
Anesthesia: desensitization, senselessness
Dura mater: thick membrane, one of the spinal coatings
Epidural space: exactly denominated space in the spinal canal between the thick spinal membrane and yellow ligament. The spinal cord is protected by spinal coatings and the outside protective layer is the thick membrane itself.
Local anesthetic: a desensitizing agent
Analgesic: a painkiller

**What is epidural analgesia?**

Epidural analgesia is the soothing of labor pain by a small dose of a desensitizing agent and a painkiller (opiate) administered by a special needle through the skin in the epidural space in the spinal canal. Labor pain perception is thus mitigated by local impact on the transmission of painful stimuli from the womb, not affecting the general conditions of the woman in labor or the fetus.

The proper moment for its administration is the onset of regular labor process, when cervix is open 3-4 cm. This is determined by the obstetrician, and the procedure may be performed by an anesthesiologist. Proper cooperation of the woman and the anesthesiologist is required for the administration of epidural analgesia.

**How is epidural analgesia administered?**
When your body is prepared for labor, you sit down on the birth/delivery bed. The nurse anesthetist will measure your blood pressure and pulse and insert a cannula (a plastic needle) into your vein for infusion of the appropriate solution. This is for your safety. With the needle inserted, it is possible to administer readily any medication at any time. The nurse will help you bending your back in the right way, lower your shoulders and push your chin towards the chest as closely as possible. The most suitable place for insertion of the epidural needle is the space between the second to third or fourth vertebra in the lumbar part of the backbone. First, the anesthesiologist will treat your skin with an antiseptic and cover the surrounding area with sterile dressings. To avoid pain when pricking the epidural space, he will desensitize the skin and subcutis by administration of the anesthetic with a very thin needle. Then he will insert a special needle in the epidural space. Through the needle, he will insert a thin tube (epidural catheter), through which the required medicinal products will be administered. Everything is done under strict sterile conditions, just like at the operating room. He will put an adhesive plaster on the prick and fix the tube to the skin. After insertion of the catheter and always after administration of an anesthetic, you must stay in horizontal position for 30 minutes. After that, you may choose any position, as your movement is not restricted. When getting up from the birthing bed, you must try to sit up and then stand up carefully (always with the help of an accompanying person or midwife!). Only after you feel confident, you may walk without any restrictions, however, only in the presence of an accompanying person.

**How does epidural analgesia work?**

After 15-20 minutes you will feel that the womb contractions are less painful and you will only perceive a dull pressure. A complete desensitization is not desirable, as it would slow down the course of labor. It means that the labor will not be completely painless, but will be much less painful and more bearable.

A single dose of anesthetic at low concentration in combination with a painkiller acts for about 60-90 minutes. As soon as the effect starts to fade away, you will ask for another dose. Then you will be able to choose any position which is comfortable for you. You can walk accompanied by another person.

The advantage of this method of pain mitigation is that it does not eliminate the urge to push when pushing out the fetus, so you will be able to cooperate with us during the entire period and the most in the important final part of labor. It may happen that towards the end of the labor you will feel an urging pressure which may even be painful. However, this is not detrimental, as these feelings will allow you active cooperation and thus end the labor naturally. In order to treat the perineum, it is sometimes necessary to add a more concentrated anesthetic solution. Before moving to the childbed unit, the anesthesiologist will remove your epidural catheter.

**Advantages of epidural analgesia:**
- removing the pain as a stress factor will improve the metabolism of both the mother and the fetus,
- good mitigation of labor pain and no harm to the baby
- increases the blood flow through placenta and thus improves the conditions for the fetus
- In case of complications requiring complete desensitization, e.g. a Caesarean section as a result of non-continuance of the labor, the mitigation of pain can be easily switched to complete desensitization.
- A complete desensitization may be achieved either by administration of a more concentrated dose of anesthetic in the epidural catheter, or by performing the sub-arachnoid block (spinal anesthesia). It is administration of the anesthetic in sub-arachnoid (spinal) space using a thin needle, which passes through the thick spinal membrane. This method of anesthetic administration results in complete desensitization within ten minutes. The method can also be used in case of planned ending of pregnancy with the Caesarean section.
- In case of a situation where an indication for a Caesarean section becomes acute, e.g. a threatened fetal hypoxia, this surgery is performed under general anesthesia. This method of anesthesia induces a state of unconsciousness and removes the pain sensation from the entire body. The condition is similar to sleep and lasts from the start until the end of the surgery. It is induced by the administration of anesthetic in the vein and ensuring that the air passages are free from obstructions. This is achieved by inserting an intubation cannula into the trachea through which anesthetic gases are introduced. By fast handling of the fetus following induction of general anesthesia, the attenuation of the baby by anesthetics is prevented.

Where pregnancy is complicated by a disease of the mother or the baby, the epidural analgesia has an expressly positive impact on the condition of the birth giver, the course of labor and health of the baby. It is so in case of following diseases of the mother:

- high blood pressure, epilepsy, diabetes, eye disorders, drug addiction and some mental status abnormalities,
- in case of premature labor, multiple pregnancy, insufficient function of the placenta, underdeveloped fetus, fetal breech presentation.

Other situations when epidural analgesia has beneficial impact on the labor include:

- programmed labor, non-continuing labor and other conditions in which a need for surgery is expected, condition after cervix surgery, artificial termination of pregnancy at advanced stage and finally the birth of a dead fetus.
Possible risks of epidural analgesia:

- severe complications such as bleeding into the spinal canal, neurological complications or infections are a possibility - however are very rare (1:200,000)

- some mothers may feel pain in the area of epidural needle insertion ("a pinhead pressure") which is transient and will fade away without treatment in several days. Epidural analgesia does not increase the incidence of back pain caused by excessive load of the locomotive organs during pregnancy

- it may happen that while trying to locate the right layer between the spinal coatings, the needle inadvertently passes through the thick membrane. This is not a dangerous complication and it cannot cause any damage to the mother. However, on the next day she may experience headache.

Should you have headache or pain in the scruff of the neck after epidural analgesia, tell your physician. Treatment is easy and successful.

The method may fail when due to worse anatomic conditions of the backbone it is not possible to identify the epidural space or the epidural catheter is moved out of this space. Sometimes, the insertion of the epidural catheter is prevented by adhesions in the epidural space or the insertion is painful. In such cases, the subjective feeling of pain relief is not experienced.

For whom epidural analgesia is not suitable?

Epidural analgesia may not be administered to persons with allergy to local anesthetics. The intervention is prevented by inflammation of the skin close to the expected injection site, blood clotting disorder (tell your doctor, if you often suffer from subcutaneous bleeding - bruises). Then they are degenerative neurological diseases, severe backbone deformations and excessive weight which also prevent the administration of epidural analgesia.

Conclusion:

- Epidural analgesia in labor may only be administered upon the request of the mother.

- The entire labor takes place under close cooperation among the anesthesiologist, obstetrician and the delivery room staff who observe the fetal heart sounds and intensity and quality of womb contractions.

- If the labor is ended with Caesarean section (planned or acute) at the operating room under epidural, spinal or general anesthesia, all vital signs of the patient are monitored.

You may obtain further information in person during consultations with the anesthesiologist every Monday at 9.30 a.m. in the premises of the dining room at the Department of Gynecology and Obstetrics KOCH at Partizánska street 27.
PATIENT'S CONSENT

Hereby I declare that I was provided with information about the process of childbirth in your hospital. I understood all the provided information and guidance and I received answers to all my questions what enables me to consent with the process of childbirth as well as with further necessary performances inevitable to preserve my health and life condition and health and life of my child.

I give my full consent freely without any pressure, any distress or under disavantageous conditions.

I also declare that I did not withhold any known information that might have negative impact on birth, decision process of physicians and my eventual treatment.

I agree to be continuously fully informed about my health state: YES  NO

Date:

Signature of patient                              Signature of physician

(Legal representative)

DECLINATION OF PATIENT'S CONSENT

Following a detailed explanation and elucidation the proposed performance was refused by the patient. The patient was informed about eventual negative consequences that might occur due to this declination.

Date:

Signature of patient                              Signature of physician

(Legal representative)
PRE-ANESTHESIA QUESTIONNAIRE

Surname: 
Name: 
Title: 

Birth Number: 
Age: 

Health insurance code: 

Weight: 
Height: 

1. Have you been undergoing treatment of acute or chronic diseases? 
   YES    NO 
   If yes, please specify: 

2. Do you take medication currently or long-term? 
   YES    NO 
   If yes, please specify: 

3. Are you allergic? 
   YES    NO 
   If yes, please specify on what drugs or substances and what kind of symptoms do you experience: 

4. Are you addicted to drugs or alcohol? 
   YES    NO 
   If yes please specify:
5. Do you smoke regularly?
   YES  NO
   If yes, how many cigarettes daily?

6. Do you experience headache?
   YES  NO

7. Do you experience back pain?
   YES  NO

8. Do you get bruises easily?
   YES  NO

9. Do you bleed long time from small wounds?
   YES  NO

10. Have you undergone surgery in full anesthesia?
    YES  NO

11. Have you undergone surgery in epidural anesthesia?
    YES  NO

12. Have you undergone surgery in spinal anesthesia?
    YES  NO

Hereby I declare that I have read and understood all questions defined in this questionnaire and responded to them honestly according to my best knowledge and belief.

Date:       Signature: