IDA-TALLINNA KESKHAIGLA

AS Ida-Tallinna Keskhaigla
Ravi 18, 10138 Tallinn
Rg-kood 10822068
Tel 666 1900
E-post info@itk.ee
www.itk.ee

Anaesthesia leaflet for the patient

If you have received this leaflet from a healthcare professional, a medical procedure (surgical operation/procedure/diagnostic test) that requires anaesthesia most likely awaits you. The purpose of this leaflet is to introduce you to the types of anaesthesia, possible side effects, and risks associated with anaesthesia.

Please read the leaflet carefully before proceeding with the medical procedure. If you do not understand the contents of this leaflet or have any questions, please contact your doctor for clarification.

What is anaesthesia and who administers it?

The term anaesthesia comes from the Greek meaning loss of sensation. Anaesthesia allows for the medical procedure to be performed on the patient painlessly and creates the necessary conditions to perform the medical procedure (e.g., ensures muscle relaxation during surgery). A specially trained physician-anaesthetist administers anaesthesia. You will be prepared for anaesthesia by the nurse anaesthetist, who takes care of you together with the anaesthetist. Their team will ensure your well-being and safety during the medical procedure, and if necessary, the anaesthetist will prescribe you pain management for the period immediately following the medical procedure.

Anaesthesia can be local, regional, or general.

- In the case of local anaesthesia, a small area of the body is numbed by injecting medicine (local anaesthetic) at the desired site. Local anaesthesia is usually performed by the doctor (e.g. surgeon) who performs the medical procedure.
- In the case of regional anaesthesia, a larger body region (e.g. a whole limb) is numbed. An intravenous cannula is placed to each patient. The patient stays usually awake, but if needed, sedatives can be given via the vein. If desired, the medicines can be administered so that the patient sleeps during the medical procedure but stays arousable by speaking. Usually, the patient is given additional oxygen through a mask or nasal cannula. In regional anaesthesia, the sensitivity to touch is mostly maintained, but there is no pain. If, for any reason, the regional anaesthesia does not work or is not sufficient, additional general anaesthesia shall be administered.
- General anaesthesia is a carefully controlled state of unconsciousness, which is achieved by a combination of the action of different medicines. The medicinal products are administered through the vein, while oxygen and, if necessary, anaesthetic gases are provided through the mask covering the mouth and nose. For most medical procedures performed under general anaesthesia, it is essential to keep the airways open and protected once unconscious by placing a special laryngeal mask (a tube-shaped mask that remains deep in the pharynx) or a breathing tube (a tube that is introduced between the vocal cords into the trachea through the mouth or nose). Therefore, it is important to inform the anaesthetist about any loose teeth, oral piercings and dentures in your mouth. When you wake up from general anaesthesia, you may experience cold and shivering, drowsiness, short-term memory problems, as well as nausea and vomiting. The hand may be painful at the venous cannula puncture site. In most cases, these complaints resolve on their own within a few hours, or medicinal products are used to provide relief. After using a breathing tube or a laryngeal mask, your throat may sometimes be sore, which usually resolves within a few days. You may experience muscle soreness, which also passes within a few days. Wound pain may occur after surgery, with painkillers used to prevent and treat it. After the medical procedure, you will be taken to a special recovery room or straight to your ward or to an intensive care unit, if necessary.

What are the types of regional anaesthesia?

- Spinal anaesthesia (‘lumbar injection’) involves injecting a local anaesthetic into the spinal fluid in the lumbar region using a special needle. Due to the drug effect, the lower body becomes insensitive after 5–15 minutes. It is also accompanied by transient immobility of the legs. Depending on the drug and its amount, spinal anaesthesia lasts from 2 to 4 hours. With the cessation of the drug's action, the sensitivity and mobility of the legs is restored.
- Epidural anaesthesia (‘lumbar injection’) – this involves the introduction of a thin plastic tube (epidural catheter) via special needle into the space near the nerve roots exiting the spinal cord (epidural room), through which a local anaesthetic is administered. The medicinal product can also be injected directly through a needle, but placing an epidural catheter gives you the advantage of using it for pain relief after the surgery. The corresponding body area becomes numb approximately 15–40 minutes after the administration of the medicinal product. The mobility of the legs may also be impaired. In the case of catheter technique epidural anaesthesia, it is possible to administer additional doses of the medicinal product via a catheter during surgery to prolong the duration of anaesthesia as well as to use it for the treatment of postoperative pain.
- Peripheral nerve blocks – this type of anaesthesia is used for limb surgery. In this case, the local anaesthetic is injected near the nerves in the thigh, knee, upper arm, armpit, collarbone or neck area, as appropriate. Within 20-40 minutes, the limb becomes warm and numb, and moving the limb is impossible for several hours. In the case of a single administration of a local anaesthetic, the duration of action of a peripheral nerve block may be up to 24 hours.
- Intravenous regional anaesthesia – this type of anaesthesia is used to perform minor operations on the arm or leg. A special tourniquet is placed on the operable limb, the local anaesthetic is injected into the vein of the area to be operated, thus producing numbness of the necessary area. The effect of the local anaesthetic starts quickly and lasts until the release of the tourniquet.

What are the potential risks associated with anaesthesia?

Anaesthesia is safer today than it has ever been, but all medical procedures involve certain risks. The most common adverse reaction is post-anaesthesia nausea and/or vomiting. Young non-smoking women as well as patients who have previously experienced nausea/vomiting after anaesthesia are more at risk of this adverse reaction.

However, life-threatening complications (cardiac arrest, respiratory arrest, blood clots in large blood vessels, brain damage) are extremely rare. Very rarely (1:50,000) malignant elevation in body temperature (malignant hyperthermia) may occur. A healthy patient has a risk of dying during anaesthesia of less than 1:200,000-1:400,000. This is comparable to the risk of dying in a plane crash and significantly lower (about 25 times) than the risk of dying in a car accident. Allergic reactions may occur rarely in all types of anaesthesia.

The following patients are at increased risk associated with anaesthesia

- patients with chronic diseases (e.g. hypertension, ischaemic heart disease, asthma, diabetes);
- patients who are allergic to the medicinal products used in anaesthesia (e.g. antibiotics, muscle relaxants);
- patients who smoke and drink alcohol frequently.

Risks of regional anaesthesia

- Systemic toxic reactions (visual disturbances, difficulty in breathing, low blood pressure, abnormal heart rhythm, convulsions) may occur if a local anaesthetic enters a blood vessel.
- A decrease in blood pressure is possible during spinal or epidural anaesthesia, so the patient's blood pressure and heart rate are constantly monitored. Dizziness or nausea, difficulty breathing may occur. If such complaints occur, they should be reported immediately to the anaesthetist or nurse anaesthetist.
- Numbness of the legs may persist for quite some time after spinal or epidural anaesthesia, and it may be difficult to empty the bladder. If necessary, a catheter is inserted in the bladder.
- After spinal or epidural anaesthesia, headache (1:100), nerve damage (1:5,000) or paralysis of the legs (1:150,000) may occur.

Risks of general anaesthesia

- It is possible to damage the teeth when placing and removing a breathing tube or a laryngeal mask.
- Very rarely (mostly at the beginning or end of general anaesthesia) so-called wakefulness during anaesthesia may occur when the patient is conscious but unable to move.
- Since the body's normal protective functions do not work when unconscious (including under general anaesthesia), there is a risk that gastric contents may enter the airways and cause life-threatening complications. Therefore, it is importantto stop eating and drinking opaque liquids (e.g. milk, coffee or tea with milk, juice with pulp) **6 hours before** anaesthesia. The drinking of clear liquids (transparent liquids without solid particles, e.g. water, tea or black coffee, pulpless juice, most sugar-containing soft drinks) should be stopped **2 hours before** anaesthesia. Please do not chew gum or smoke **for 2 hours** before anaesthesia. Observance of the fasting rule is important regardless of type of anaesthesia, so the rule must be followed even if regional anaesthesia is planned. If you have not complied with the fasting rule, the medical procedure may be cancelled or postponed for your safety. In an emergency case, potential risks are considered, and respiratory protection measures are put in place, but there is still a risk of aspiration of gastric contents.
- As there is mostly no muscle tone during general anaesthesia, posture-induced nerve compression may occur in rare instances, causing weeks lasting numbness in some parts of the body.

We would like to draw your attention to the following:

- All needles, catheters and drip systems used for anaesthesia are single-use, preventing transmission of infection from one patient to another.
- Blood products will only be transferred to you for a specific indication. All blood products have been tested for infections before, but the risk of infection cannot be completely excluded. If you do not want a blood transfusion for religious or other reasons, tell your doctor.
- If you are allowed to go home on the day of the medical procedure, it is recommended that you invite an escort to oversee your safe return home. After anaesthesia, you are not permitted to drive a car, use complex devices or tools requiring coordination, make important decisions, or drink alcohol for a period of 24 hours.

Before anaesthesia, we kindly ask you to fill in the*document* ‘Pre-anaesthetic patient health assessment questionnaire’*,* which provides the anaesthetist with important information about your health, lifestyle, and previous experience of anaesthesia to choose a method of administering anaesthesia that is suitable and safe for you.

What can you do prior to your medical procedure to make the anaesthesia as safe as possible?

- Try to improve your physical fitness (regular walks, health sports).
- Quit smoking (at least 6 weeks before the planned medical procedure) and limit alcohol consumption.
- Unless otherwise advised by your doctor, take medicinal products prescribed by your doctor regularly until the day of the medical procedure. For information on how to take medicinal products (e.g. for the treatment of diabetes, heart and kidney failure, and for weight loss), please refer to the pre-anaesthetic questionnaire.
- The attending physician will give recommendations on the use of other antidiabetic medicinal products.
- If you are taking medicinal products that affect blood clotting, tell your doctor, who will give a recommendation on whether it is necessary to stop taking the medicinal product before the planned medical procedure and when you are permitted to take the last dose.
- Bring your regular medicinal products with you to the hospital.
- Follow the fasting rule described above.

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