

# Peripartum life-threatening bleeding

Peripartum life-threatening bleeding can be explained as a very rapidly increasing blood loss, estimated to be approximately **over 1500 ml**.

## Etiology

In many cases, we can imagine under peripartum life-threatening bleeding:

1. **primarily obstetric non-surgical bleeding** - the cause is then most often hypotonia to atony of the uterus,
2. **primarily surgical bleeding** - the causes are then disorders of separation of the placenta or various obstetric injuries,
3. **coagulation disorders** - the cause can also be disseminated intravascular coagulopathy.

The biggest danger with bleeding is that it can happen silently, so it is necessary for the midwife to check the woman regularly after the birth.

## Main assumptions of minimization

The main prerequisites for minimizing the occurrence of life-threatening peripartum bleeding are **prevention**, **early diagnosis** and **effective treatment**. Effective treatment of peripartum bleeding requires precise coordination and a multidisciplinary approach. The goal of treatment is **not only life saving**, but preferably also possible **preserving reproductive health**.

## Organization

The basics of a possible quick solution to the situation are:

- elaborated **crisis plan**,
- **definition of individual positions and work** of expert members of the crisis plan
- maintaining continuous **documentation** of peripartum life-threatening bleeding
- **management by one professional person** all organization of work and instructions

## Stabilization of the mother's condition

The most basic thing is to find out the cause of peripartum bleeding and eliminate this cause. Furthermore, we locate the source of the bleeding through examination in mirrors, ultrasound or palpation by bimanual examination. We will assess and ensure vital functions. We will give oxygen. We will administer fluid replacements using an intravenous line. Via i.v. we give uterotonics. We must ensure that the mother does not suffer from hypothermia, or we will start treatment for hypothermia. We will insert a urinary catheter and consider the type of other treatment for life-threatening peripartum bleeding.

## Laboratory examination

We will send the collected blood sample to:

- examination of **blood count**,
- examination of **fibrinogen levels**
- basic **coagulation examination**
- orientation test **blood coagulation with thrombin**
- **pre-transfusion examination**.

## First aid procedure for hypotonia to uterine atony

**Procedure no. 1:** massage of the uterus, administration of uterotonic i.v. (oxytocin, carbetocin, methylergometrine), administration of prostaglandins i.v. infusion or i.m. into the uterine muscle, performing an instrumental or digital revision of the uterine cavity.

**Procedure no. 2** (if procedure no. 1 fails): we remove the coagulum, administer i.v. uterotonics, apply a Bakri

balloon catheter or perform vaginal tamponade

**Procedure no. 3** (in the event of failure of procedure no. 2): performing surgical intervention (ligature of aa.uterinae and aa.ovaricae, B-Lynch uterine suture, etc.), performing selective catheterization embolization of arteriae uterinae, we can consider administration of recombinant activated factor VII.

**Procedure no. 4** (if all previous procedures fail): here we lean toward hysterectomy because of the devastating injury to the entire uterus and because of the possible source of sepsis represented by the uterus itself.

## Coagulation Support

In order to restore the overall effectiveness of the hemostatic mechanism and promote coagulation, it is necessary to observe the following measures:

- maximum **hypothermia correction**
- maximum **correction of acidosis**
- correction of parameters of the whole **systemic homeostasis**
- **correction of hypocalcemia**

### Optimal values of coagulation factors

#### Erythrocytes

The minimum hemoglobin value should be **70g/l**. The ratio of transfused units of plasma to transfused units of erythrocytes should be 1:1, at most 1:1.5.

#### Plasma

The minimum value of plasma administered at the beginning is assumed to be between **15 to 20 ml/kg**.

#### Platelets

If the amount of platelets in the body drops below  $70 \times 10^9/l$ , administration of platelets is recommended.

#### Fibrinogen

If fibrinogen in the body drops below 1.5-2 g/l, administration of fibrinogen is recommended.

#### Recombinant activated factor VII(rFVIIa)

When we encounter the failure of all the procedures possible so far, we are inclined to administer recombinant activated factor VII (rFVIIa), especially because of the possible prevention of destruction of the uterus, when we would have to be forced to perform a hysterectomy. Initial dose i.v. represents 90-120 µg/kg.

After securing the mother's life, **thromboprophylaxis** is carried out in the form of **low-molecular-weight heparin**.

## Links

### Related Articles

- Pregnancy
- Bleeding conditions in pregnancy
- Bleeding conditions in obstetrics
- Birth

### References

- HÁJEK, Zdeněk – CZECH, Eugene – MARSHAL, Karel, and collective.. *Obstetrics*. 3rd revised and supplemented edition. Prague. 2014. 576 pp. ISBN 978-80-247-4529-9.