

A drug affecting uterine activity

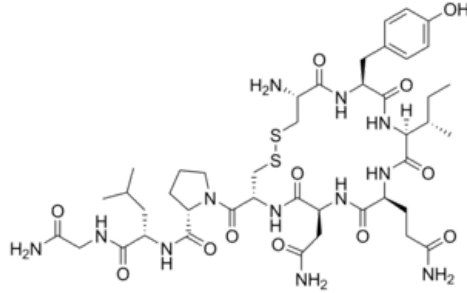
Uterine activity can be influenced medicinally in the sense of ``increasing activity (*uterotonics and uterokinetics*), or ``reducing or even stopping activity (*tocolytics, spasmolytics*).

Increased uterine activity

These drugs are used to strengthen the contraction of the uterine muscles.

Uterokinetics

Substances causing regular and periodic contractions myometrium. This group includes oxytocin and prostaglandins. However, an increase in contractions is usually accompanied by greater labor pain, for this reason the administration of uterokinetics should be supplemented with analgesic treatment (preferably epidural).



Oxytocin

We use its **synthetic analogue** medicinally. Infusion of 2 IU in 500 ml of 5% glucose solution (10–30 drops/min), dose according to CTG.

Indication is "induction of uterine activity", primary or secondary stimulation of "weak contractions", uterine hypotonia (atony) after childbirth or abortion. We use it once (2 UI) for delivery of the head or attachment of the umbilical cord during a "breech delivery". Together with prostaglandins, it is used to terminate pregnancy in the II. and III. trimester (**5–10 IU in infusion**). **It can also be used as a galactokinetic during pregnancy (intranasally or drops).**

Contraindicated in case of hypersensitivity to the substance, cephalopelvic disproportion, presence of placenta praevia, in case of abruption of the placenta, hypertonus or hyperactivity of the uterus, suspicious or abnormal CTG, in case of previous surgical procedures on the uterus in the anamnesis (risk of rupture).

Prostaglandins

In obstetric practice, we use two - **PGE₂** and **PGF_{2α}**. Application p.o., i.v., intramyometrial, vaginal, cervical, intraamniotic, nowadays mainly locally (general administration has a number of adverse effects).

Indicated for **ripening of the throat' (gels)**, **induction of labor' (tablet or vaginal gel)**, **induction of abortion** in the II. trimester, and for ' "severe postpartum metrorrhagia".

Contraindications similar to oxytocin.

The most frequently used preparation (PGE₂) – **Template:HVLP (Prepidil Gel)**.

Uterotonics

Substances causing long-lasting tonic contraction of the myometrium. Chemically, these are ergot alkaloids and their derivatives. It acts through alpha receptors, serotonin and some dopaminergic receptors.

Ergometrine and methylergometrine

We give i.v. or directly into the myometrium, the effect begins quickly.

Use mainly 'in III. at the time of delivery with uterine hypotonia (atony), or with subinvolution of the uterus in puerperium.

The most common AEs are hypertension (can be suppressed with chlorpromazine) and headache, as well as palpitations, dizziness, tinnitus, abdominal pain, diarrhea, dyspnoea, nausea, vomiting, etc.

Use contraindicated during pregnancy (induce miscarriage or teratogenesis), in I. and II. during childbirth, with sepsis, cardiovascular diseases, hepatopathy and nephropathy and hyperthyroidism

Decreased uterine activity

The action of these drugs leads to a reduction or even interruption of uterine contractions.

Tocolytics

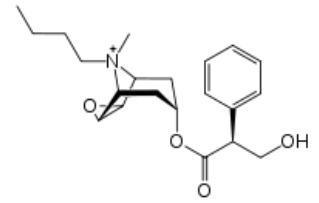
Only ``Template:HVLP is registered in the Czech Republic, which acts as a competitive antagonist of oxytocin receptors. Other agents used for tocolysis include β -sympathomimetics, magnesium sulfuricum, prostaglandin antagonists, and calcium channel blockers.

Indications vary according to the duration of action.

- **Long-term tocolysis** is used in case of impending premature birth.
- '*Acutely* we use tocolytics to suppress contractions during preparation for sectionio caesarea in case of acute hypoxia of the fetus, or to induce relaxation before performing a caesarean section in a difficult-to-place fetus.
- *Partial tocolysis* is used for acute hypoxia of the fetus during vaginal birth (with excessive activity of the uterus), as well as prevention of abdominal operations during pregnancy, before and after cerclage, etc.

Antispasmodic

Substances used to suppress smooth muscle spasms, but the effect is usually weak, requiring the administration of a strong analgesic (e.g. pethidine). It is administered parenterally during childbirth (i.m., i.v. and per rectum). The representative is **butylscopolamine** (Buscopan, Buscolysin). The indication is **stiff, spastic neck**'.



Links

Related Articles

- Oxytocin
- Prostaglandins

External links

- Pharmacy affecting uterine activity (http://www.csarim.cz/Public/csarim/doc/prednasky_XVII_CSARIM/Noskova-Co-by-mel-anesteziolog.pdf)
- Tocolytics and uterotonics, substances affecting the uterus (<http://leciva-leky.nasclovek.cz/tokolytika-uterotoni-ka>)

References

- ČECH, Evžen. *Obstetrics*. 2. edition. 2006. ISBN 80-247-1303-9.
- ŠVIHOVEC, Jan – COLECTIVE, A. *Farmakologie*. - edition. 2018. 1008 pp. ISBN 9788027121502.
- Quadruplets of developed questions based on the study materials of J. Beneš, L. Mikšík, e-learning and the book Gynecology and Obstetrics (Martius 2005).