

## Summary

The thesis is focused on perioperative use of opioids during caesarean section. The general part is concerned with pharmacology of opioids due to their practical use during general and regional anaesthesia and postoperative analgesia with particular focus on remifentanil. Emphasis is put on the placental transfer of opioids into breast milk which has the possible influence on postnatal adaptation of the newborns and breastfeeding/lactation.

The first part of the research describes current anaesthetic practice and opioid use in obstetrics in the Czech Republic according to the OBAAMA-CZ study in 2011.

The second study on a unique group of 151 parturients showed that bolus application of remifentanil at a dose of 1 µg/kg at the time of 30 seconds before induction of general anaesthesia for caesarean section significantly stabilizes maternal hemodynamic parameters (blood pressure, heart rate) and reduces the stress response to tracheal intubation and skin incision. On the contrary, no influence on depth of anaesthesia (monitored by BIS) was found. But we demonstrated a slight effect of remifentanil on the assessment of postnatal adaptation of newborns at first minute after delivery. However, this attenuation was very short and in the fifth minute the results were already fully comparable to the control group. From this perspective it seems that the influence of remifentanil at a dose of 1 µg/kg on postpartum adaptation has no significant clinical importance.

In assessing the impact of gene polymorphism of placental transport system glycoprotein P and µ-opioid receptor we demonstrated decreased stabilizing effect of remifentanil on maternal hemodynamics in ABCB1 wild type mothers, while the adaptation of the neonates was clinically worse in OPRM1 wild type and ABCB1 variant allele carriers.