

3. Kalkoff M, Shetty S: Ventilation through a small bore intubating catheter using Ventrain[®] in an elective procedure. http://bja.oxfordjournals.org/forum/topic/brjana_el;9580; 18.12.2012.
4. Kristensen MS, Teoh WH, Graumann O, Laursen CB: Ultrasonography for clinical decision-making and intervention in airway management: from the mouth to the lungs and pleurae. *Insights Imaging* 2014; 5: 253–279. doi: 10.1007/s13244-014-0309-5.

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Commentary to "Remifentanil for labour pain relief"

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To the Editor,

It was with great interest that we read the review paper entitled "Remifentanil for labour pain relief" by Dr Joanna Solec-Pastuszka *et al.*, published in issue no. 1/2015 of *Anesthesiology Intensive Therapy* [1].

The problem of labour pain relief remains an important issue that requires our constant attention and improvement. The disadvantages of pethidine listed in the article are undisputable. However, we should ask ourselves whether, despite its popularity, or maybe precisely because of it, we should talk more decisively about the necessity to stop using it altogether in the delivery room. Next year, two decades will have passed since the publication of Olofsson's article in *the British Journal of Obstetrics and Gynaecology*, in which he made it very clear that the use of pethidine during labour is unethical and medically erroneous [2]. In 1997, in *The Lancet*, Reynolds and Crowhursts equally strongly opposed the use of opioids (pethidine and morphine) for labour pain relief, finding it unjustified [3].

In light of their findings, remifentanil seemed a good alternative, which had been demonstrated by numerous studies from the beginning of the 21st century to which the authors refer [1]. However, it should also be pointed out that during the second decade of the 21st century, opinions as to the administration of this drug are no longer so clear [4, 9, 10].

Firstly, the use of remifentanil during labour can lead to sedation and respiratory depression. The literature has reported numerous cases (concerning as much as 27% of study participants) in which SpO₂ in mothers dropped to 91–92% and the use of oxygen was necessary [4]. In recent years even more alarming reports have been published. These concern cases of severe respiratory depression, or

even respiratory arrest, in parturients administered intravenous remifentanil [6, 7].

Secondly, the question should be asked whether patients treated with this method have the same comfort of labour as when neuraxial anaesthesia is employed. This comfort does not only refer to pain but also the possibility of "walking analgesia", of moving and assuming different labour positions, which is restricted by the necessity of continuous HR, RR and SaO₂ monitoring, as well as an additional intravenous line (a pump with remifentanil), often in addition to an already working pump with oxytocin. Moreover, it is of importance that the parturient is affected by opioid sedative action, which may have significant impact on the psychological labour and birth experience.

Thirdly, the hyperalgesic potential of remifentanil, as demonstrated in animal studies, should be taken into account [8].

Although the above findings do not erase the advantages of remifentanil, they do tell us to approach this method with more caution. Experts have pointed out "significant side effects" and recommend very scrupulous and continuous monitoring of vital signs, as stated by Van Der Velde in his article in *Current Opinion in Anesthesiology* of March 2015 entitled "Patient-controlled intravenous analgesia remifentanil for labor analgesia: time to stop, think and reconsider." [9, 10].

Another issue raised by the authors concerns contraindications for central blocks in parturients which are the gold standard of anaesthesia in spontaneous delivery [1].

At our hospital, epidural analgesia is performed in 85% of spontaneous deliveries. Therefore, based on many years of experience, we believe that obesity should not be treated as a "technical contraindication". We also anaesthetise (epidural, CSE, CSA, spinal) patients undergoing spontaneous delivery, whose BMI exceeds 45 kg m⁻², and we even had a recent case of a BMI of 65 kg m⁻². It should only be remembered that in such parturients epidural anaesthesia ought to be performed as skilfully and safely as in other anaesthetic procedures. Therefore, in patients with a BMI exceeding 40 kg m⁻² ultrasonographic identification is routinely used during central blocks (epidural, CSE, CSA). Moreover, it is

worth remembering that the oxygen reserve in parturients is physiologically absent (low FRC), which in cases of respiratory depression necessitates immediate intervention. Maintenance of patent airways in an obese patient additionally complicates the situation, creating a real threat to the life of both mother and her unborn child. Therefore, we agree with experts that parenteral opioids should not be used in spontaneous delivery anaesthesia as a routine [4]. In cases of potential contraindications to central blocks, inhalation agents should be considered [11].

We agree with the authors of the discussed paper as to the necessity to improve the availability and conditions of labour analgesia in Poland and that each medical centre should develop its own standards. However, having in mind the safety and comfort of parturients, we recommend performing epidural analgesia (or other central neuroaxial blocks) as widely as possible, as it remains the gold standard of management.

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References:

1. Solec-Pastuszka J, Zagrodnik-Ulan E, Bohatyrewicz R *et al.*: Remifentanyl for labour pain relief. *Anaesthesiol Intensive Ther* 2015; 47: 82–86. doi: 10.5603/AIT.2015.0008.
2. Olofsson C, Ekblom A, Ekman-Ordeberg G *et al.*: Lack of analgesic effect of systemically administered morphine or pethidine on labour pain. *Br J Obstet Gynaecol* 1996; 103: 968–972.

3. Reynolds F, Crowhurst JA: Opioids in labour — no analgesic effect. *Lancet* 1997; 349: 4–5.
4. Tveit TO, Halvorsen A, Seiler S *et al.*: Efficacy and side effects of intravenous remifentanyl patient-controlled analgesia used in a stepwise approach for labour: an observational study. *Int J Obstet Anesth* 2013; 22: 19–25. doi: 10.1016/j.ijoa.2012.09.003.
5. Freeman LM, Bloemenkamp KW, Franssen MT *et al.*: Patient controlled analgesia with remifentanyl versus epidural analgesia in labour: randomised multicentre equivalence trial. *BMJ* 2015; 23: 350. doi: 10.1136/bmj.h846.
6. Bonner JC, McClymont W: Respiratory arrest in an obstetric patient using remifentanyl patient-controlled analgesia. *Anaesthesia* 2012; 67: 538–540. doi: 10.1111/j.1365-2044.2011.06997.x.
7. Pruefer C, Bewlay A: Respiratory arrest with remifentanyl patient-controlled analgesia — another case. *Anaesthesia* 2012; 67: 1044–1045. doi: 10.1111/j.1365-2044.2012.07273.x.
8. Kim SH, Stoicea N, Soghomonyan S *et al.*: Intraoperative use of remifentanyl and opioid induced hyperalgesia/acute opioid tolerance: systematic review. *Front Pharmacol* 2014; 8: 108.
9. Kranke P, Girard T, Lavand'homme P *et al.*: Must we press on until a young mother dies? Remifentanyl patient controlled analgesia in labour may not be suited as a "poor man's epidural". *BMC Pregnancy Childbirth* 2013; 13: 139. doi: 10.1186/1471-2393-13-139.
10. Van de Velde M: Patient-controlled intravenous analgesia remifentanyl for labor analgesia: time to stop, think and reconsider. *Curr Opin Anesthesiology* 2015; 28: 237–239. doi: 10.1097/ACO.000000000000191.
11. Rosen MA: Nitrous oxide for relief of labor pain: a systematic review. *Am J Obstet Gynecol* 2002; 186: 110–126.

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In reply to the commentary to Commentary to "Remifentanyl for labour pain relief"

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In response to the letter of Radosław Chutkowski *et al.*, I would like to thank them for their opinion in the discussion. The remarks and doubts of Dr Chutkowski regard a number of issues I would like to address.

Although I do agree that pethidine should be consigned to history, this is not yet the case, a fact which is evidenced by national and international reports of its common use, despite its negative reputation in numerous medical facilities [1]. I also agree that "remifentanyl seemed a good alternative..." in comparison to other opioids used parenterally in labour analgesia; even more, I believe it is still such an alternative, a view that is also shared by the authors of the publications quoted by Dr Chutkowski.

Based on the publications of Tveit and Freeman, Chutkowski claims that using remifentanyl may lead to sedation and respiratory depression. However, detailed analysis of Trevit's report [2] gives us important information that has escaped Dr Chutkowski's notice. Trevit discontinued the PCA infusion and used O₂ supplementation when the concentration of SaO₂ dropped below 92% or when the respiratory rate was less than 9 min⁻¹. Subsequently, after the normalization of parameters,