Editorial
Remifentanil PCIA for labour analgesia: a world of caution

M. VAN DE VELDE, S. DEVROE (*) and E. ROOFTHOOF (**)  

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In recent years, remifentanil patient controlled intravenous analgesia (PCIA) has received worldwide a lot of attention as labour analgesic strategy. A recent narrative review has summarized current knowledge (1). Remifentanil provides moderate analgesia comparable to other systemic drugs or nitrous oxide and of lesser quality then neuraxial analgesia. For many women however mild analgesia would be sufficient to guide them through the labour process. However, for many years concerns about maternal respiratory depression have been raised when remifentanil PCIA is used. Already in the original publications a large number of parturients (20-25%) had some degree of respiratory depression (2). And several cases of maternal respiratory arrest resulting in near fatalities have been published (3,4,5). Stocki et al. also demonstrated that remifentanil PCIA results in maternal respiratory arrest in 25% of parturients already in the first hour of therapy during a well designed, prospective study (6).

In this issue of Acta Anaesthesiologica Belgica, a Dutch group publishes the results of a retrospective, observational study in which the authors compare their standard technique of maternal monitoring during remifentanil PCIA with a novel system of continuous respiratory monitoring using an acoustic signal at the trachea in the neck. The standard technique of monitoring is saturation monitoring which is connected to an alarm system which is carried by a midwife. Manual notes are made on regular time points. After the first hour of remifentanil infusion continuous midwifery care is not available. Although this study has all the flaws associated with a retrospective, non randomized study, it provides new and important knowledge about remifentanil PCIA for labour and the maternal effects of this technique.

The remifentanil protocol used was a remifentanil bolus of 30 mcg with a lock out of 3 minutes and no background infusion. This is conservative when compared to what is used usually in many studies (1). Remifentanil can be requested by anybody in labour. However, only 6% of parturients used the modality during the study period prior to introduction of the new monitoring device, whilst 7% used remifentanil PCIA after the new device was used. From their experience and results we can learn several things (7):

1. Despite international recommendations to provide continuous, uninterrupted midwifery care, the authors acknowledge and note that this is not performed due to logistical and organisational reasons. Additionally, record keeping in the “standard” system is not performed in many cases (40% have incomplete or no records). So, this raises the question to me: Is this happening also in other places? How good are busy labour wards with maternal monitoring? I would encourage departments using this technique to audit their practice and evaluate how well they are succeeding in continuous monitoring in one-to-one midwifery care.

2. Standard monitoring apparently is missing many instances of respiratory depression. In the standard group desaturation <80%, desaturation below <94% and reduced respiratory rate (<8 per minute) was noted in respectively 1%, 25% and 0% of patients. However, in the continuous monitoring group, these events occurred in 33%, 97% and 63% of patients respectively. Although they did...
not result in a respiratory arrest, these figures are extremely worrying.

3. They discussed 3 cases of serious respiratory depression in more detail. In these cases serious or prolonged episodes of desaturation occurred or prolonged periods of reduced respiratory efforts were noted. Can we really continue to support a technique of labour analgesia that induces 1-3% risk of serious respiratory depression.

4. The authors discuss also the problem of false alarms when patients are continuously monitored in a labour ward setting. The are many false positive alarms in the present study. Midwifery staff is discouraged and might not react when a real alarm is triggered.

Although this study is flawed by the retrospective nature and the sample size of patients is small, the information provided is alarming and disturbing to those who take care of pregnant patients. Undoubtedly, the system of monitoring used in this hospital can be improved, but this study underlines the reality of care in many hospitals around the world, even the developed world: resources are limited and the “ideal world” of continuous midwifery care which is uninterrupted can not be guaranteed in many institutions.

Also, the authors of this editorial remain puzzled as to the reasons why worldwide so many institutions continue to use this technique which initially was in part advocated because it would “demedicalize” labour analgesia and make the whole process more “natural”. However now the opposite is true: the parturient is subjected to 2 IV lines, requires regularly additional oxygen through a nasal cannula or face mask, has the continuous presence of a midwife in the labour room, is monitored using saturation monitoring and respiratory rate monitoring. Where are the days of a good old epidural: a short episode of blood pressure monitoring and that was it. Those were the days!

We are sure in the months and years to come, we will see more reports on serious complications and the problems of adequate monitoring of the mother with this technique. We also hope that those institutions and departments using remifentanil regularly, will audit their own practice and will publish their results either to reassure the critical voices or to change their practice.

Finally, I would like to thank the authors for their courage to present and share these data. They provide further insight in to the risks associated with this labour analgesia technique. I wonder what the authors have changed after evaluating their technique?

References