

## Correspondence

### *Postoperative pain management and acute pain service in Canada*

To the Editor:

Zimmermann and Stewart gave a very interesting survey of the development of acute pain services in Canada.<sup>1</sup> We agree with most of their recommendations for pain therapy on normal wards and their reservations held against the use of epidural opioid analgesia (EOA) especially. Unfortunately, the authors quoted our German questionnaire survey<sup>2</sup> wrongly, i.e., supporting the use of EOA on normal wards. On the contrary, this survey summarized more than 100 cases of severe respiratory depression in 25% of all departments questioned. This was the most frequent potential life-threatening side effect in this survey. Therefore, in accordance with most Canadian anaesthetists, we concluded that the use of EOA may not be recommended outside of ICU or the recovery room unless very close monitoring of respiration and vigilance is guaranteed. The main argument is the delayed onset of respiratory depression (in contrast to immediate occurrence of hypotension following epidural local anaesthetics). Even the protagonists of EOA on normal wards<sup>3</sup> recommend a respiratory monitor and ICU observations for the first 48 hr for all patients with increased risk (e.g., age >50 yr, ASA status >II, thoracic or upper abdominal surgery). These criteria hold true for most of our patients where epidural analgesia was used.<sup>4</sup> Under these circumstances the continuous infusion of low-dose bupivacaine seems to be a safer alternative, provided that visits to these patients (including neurological examinations) are made by an acute pain service at least once a day.<sup>4,5</sup>

Christoph Maier MD  
Hinnerk Wulf MD  
Klinik für Anästhesiologie und Operative Intensivmedizin  
University of Kiel  
D24105 Kiel  
Germany

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#### REPLY

Thank you for the opportunity to respond to the concerns of Drs. Maier and Wulf. Their paper<sup>1</sup> was published in German and we based our comments on a Medline English abstract which stated "EA was administered in 62.4% on ordinary wards" and "... 66.7% also favoured epidural opioids on ordinary wards." We interpreted these percentages to indicate the majority of those surveyed supported the use of epidural opiates on ordinary wards; however, if we have misrepresented their results we apologize.

We agree that respiratory depression is a major concern when administering epidural opioid analgesia. However, Ready does not recommend "... ICU observation for the first 48 hours for all patients with increased risk," but rather "... admission to ICU should be based on customary criteria such as medical status and the type and duration of surgery."<sup>2</sup> In subsequent reports he confirms that adjustment of epidural morphine doses in combination with simple serial assessment of the level of consciousness allows for the safe administration of epidural opioids on regular hospital wards, even for those patients with advanced age and poor physical condition.<sup>3,4</sup> This is the approach we have taken at our hospital and we have not had a single major adverse event that can be attributed to the use of epidural opioids on general surgical wards. We agree with Baxter<sup>5</sup> that the risk of respiratory depression with postoperative opioids is the same regardless of the route they are administered.

Finally we disagree with the statement of Drs. Maier and Wulf that continuous epidural infusion of low-dose bupivacaine is a safer alternative than epidural opioids. Epidural local anaesthetics, even in low doses, have the potential to produce sympathetic, sensory, and motor blockade as well as cumulative

toxicity related to the central nervous and cardiovascular symptoms.<sup>6</sup> Clinical trials have documented side effects when low-dose bupivacaine is administered with epidural morphine.<sup>7</sup> Of the references cited by Drs. Maier and Wulf to support their statement, one is not yet published and the other reports the occurrence of high epidural blocks as well as one intrathecal migration of an epidural catheter.<sup>8</sup> While no serious morbidity resulted from these events, you cannot use this as evidence that epidural local anaesthetics are safer than epidural opioids.

Despite the above concerns, we believe the combination of low-dose epidural bupivacaine and fentanyl or morphine does improve the efficacy of epidural analgesia and is safe on general postoperative wards provided the nursing staff are appropriately trained, monitoring protocols established, and physician assistance is available 24 hours a day. It is also our impression that since our survey was done, more centres in Canada are using epidural opioids alone or in combination with low-dose bupivacaine to improve the management of postoperative pain.

John C. Stewart MD FRCPC  
Donald Zimmerman MD  
Department of Anaesthesia  
Foothills Hospital  
Calgary.

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## Plasma cholinesterase activity in infants

To the Editor:

We have read the Case Report by Pasquariello and Schwartz,<sup>1</sup> describing plasma ChE deficiency in a two-day-old neonate. Indeed, this is the youngest reported patient to exhibit apnoea after succinylcholine. Laboratory testing confirmed plasma cholinesterase deficiency as the mechanism for prolonged neuromuscular relaxation. We would like to bring to the attention of readers that some neonates can have decreased plasma cholinesterase activity within the first two weeks of life. This activity usually reaches normal levels within one month of age.<sup>2</sup> With respect to the infant described in the Case Report, analysis of plasma ChE activity should be made at an older age before a definitive diagnosis of cholinesterase deficiency is made. This is especially important since both parents and an older sibling had normal cholinesterase activity. Genetic analysis of the neonate's DNA would confirm the presence of a silent gene.

Susan A. Vassallo MD  
Nishan G. Goudsouzian MD  
Harvard Medical School

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#### REPLY

We thank Drs. Vassallo and Goudsouzian for their comments. We have been attempting to contact the family for a follow-up plasma cholinesterase level (PChE). Strauss<sup>1</sup> reported a group of premature infants, 16% of whom had abnormally low PChE. The lowest value he reported in that group was 4 U·ml<sup>-1</sup> (normal >7 U·ml<sup>-1</sup>) or approximately 57% of normal. This included the values of a pair of twins with persistently low PChE, thought to be a genetic abnormality. Zsigmond and Downs<sup>2</sup> found the mean PChE activity of infants and newborns to be approximately 50% of adults. These results double and approach adult values, by several weeks of age. Because the PChE level of our patient<sup>3</sup> was 0.2 U·ml<sup>-1</sup> (5.8% of normal), we felt that this showed practically no PChE activity and an increase of 10-20-fold to reach "normal" values would be highly unlikely given the above data. If we are able to obtain a follow-up plasma cholinesterase level on our patient, we will report our findings.

Caroline A. Pasquariello MD  
Roy E. Schwartz MD