



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



Letter to the Editor

Labour analgesia in COVID-19 positive parturients: *Points to ponder!***Keywords:**

Labour analgesia
 COVID-19
 Nonpharmacological modalities
 Central neuraxial block

To the Editor,

Amid the range of theoretical-to-practical concerns of varying significances, most of the working obstetric-guidelines propose the safety of neuraxial anaesthesia in COVID-19 positive parturients, particularly at the bet of avoiding higher risk of aerosol generation associated with general anaesthesia in the context of emergency caesarean-sections [1–3]. Nevertheless, these patients additionally classify as potential candidates for labour analgesia for safe conduct of normal vaginal delivery. While an epidural registers as the gold-standard of labour analgesia, the circumstantial decision-making on the relative risk-benefit profile of labour epidural in a COVID-19 patient can be precarious in view of the peculiarities such as:

1. *Thrombocytopenia*, initially reported in almost one-third COVID-19 patients and associated with thrice the risk of a severe underlying infection in accordance with a recent meta-analysis [1–3]. Despite the limited data on thrombocytopenia in pregnancy, a declining platelet-count poses a certain obstetric anaesthesiologist's dilemma.
2. *Coagulopathy*, resulting from the prothrombotic sequel of an underlying COVID-19 infection [4,5] can potentially aggravate the pregnancy-associated hypercoagulable state. Anticoagulants being administered in such circumstances, present obvious concerns [1–3].
3. *Epidural-associated pyrexia*, manifests with an elevated incidence of two and a half times with labour epidural analgesia. Quite interestingly, Mullington et al. red-flag a heightened possibility of the aforementioned with the institution of early labour epidurals as proposed by Bauer and colleagues [1,6]. Needless to say, an ongoing COVID-19 related systemic inflammatory state predisposes to greater temperature surges in the parturients [4,6,7]. While the causal association of such pyrexia responses with the subsequent poor neonatal neurological outcome continues to be ardently debated [8], the possible links should not be overlooked particularly in face of an exasperated pyrexia resulting from COVID-19 [1,6].

4. *Timing of epidural catheter placement*, if significantly prefixed increases the odds of intrapartum pyrexia, furthermore. This counters the commonly cited advantage of respiratory-exacerbation avoidance owing to an early labour epidural [6].
5. *Technical issues*, emanate while wearing personal protective equipment, presenting challenges to the best in business. To add to it, there is always a theoretical possibility of viremic-blood seeding the epidural/subarachnoid space, to result in meningitis/encephalitis [1–3].

It is noteworthy that the constellation of the abovementioned concerns in the most high-risk patients can even preclude a safe neuraxial analgesic approach. While the alternatives such as an inhalational Entonox-based labour analgesia are limited by aerosol generation risk, the other pharmacological modalities like opioids and non-steroidal anti-inflammatory drugs (NSAIDs) are not without their risks of respiratory depression and accentuation of the COVID-19 disease process, respectively [1–3]. Moreover, the compounding factors including metabolic derangements and COVID-19 related end-organ dysfunction make the matter even worse [4,5,7,9].

Such circumstances constitute enterprises for the consideration of the non-pharmacological labour analgesic modalities. The non-pharmacological analgesic techniques may be used include: psychotherapy, acupuncture, water bath, transcutaneous electrical nerve stimulation, continuous support, massage and intradermal sterile water block (ISBW) combined with pudendal nerve block (for second stage of labour) [10,11].

Therefore, the attending obstetric anaesthesiologist needs to meticulously gauge the context to reach an appropriate case-based decision on the suitability of the performance and timing of labour epidural analgesia in COVID-19 positive parturients [6,10,11]. In the situations ill-suited to labour epidural, resorting to the safer non-pharmacological options can be instrumental in ensuring an uninterrupted provision of labour analgesic services even to the highest risk COVID-19 parturients. This is aligned with the highest priority goal to err on the side of caution while battling the intriguing viral enemy. On a positive note, the adaptations we endorse during these desperate times may eventually turn out much to the welfare of the obstetric population well beyond the pandemic.

References

- [1] M.E. Bauer, K. Bernstein, E. Dinges, C. Delgado, N. El-Sharawi, P. Sultan, et al., *Obstetric anaesthesia during the COVID-19 pandemic*, *Anesth. Analg.* 131 (2020) 7–15.
- [2] O. Alyamani, I. Abushoshah, N.A. Tawfeeq, F. Al Dammas, F.A. Algurashi, *Considerations and recommendations for obstetric anaesthesia care during COVID-19 pandemic - Saudi Anaesthesia Society guidelines*, *Saudi J. Anaesth.* 14 (2020) 359–364.

- [3] K. Jain, N. Bhatia, A. Grewal, S.T. Pandya, S. Gupta, R. Bagga, et al., Management of pregnant laboring women during COVID-19 pandemic, *J. Anaesthesiol. Clin. Pharmacol.* 36 (2020) S91–S96.
- [4] R. Magoon, COVID-19 and congenital heart disease: cardiopulmonary interactions for the worse!, *Paediatr. Anaesth.* 30 (2020) 1160–1161.
- [5] R. Magoon, Left-ventricular diastolic dysfunction in COVID-19: opening the Pandora's Box! [ahead of print, January 11], *Korean J Anesthesiol* (2020), <https://doi.org/10.4097/kja.21010>.
- [6] C.J. Mullington, J. Kua, S. Malhotra, The timing of labor epidurals in COVID-19 parturients: a balance of risk and benefit, *Anesth. Analg.* 131 (2020) e131–e132.
- [7] R. Magoon, Pulmonary vasculature in COVID-19: mechanism to monitoring! [ahead of print, October 5], *Korean J Anesthesiol* (2020), <https://doi.org/10.4097/kja.20536>.
- [8] C. Qiu, J.C. Lin, J.M. Shi, T. Chow, V.N. Desai, V.T. Nguyen, et al., Association between epidural analgesia during labor and risk of autism spectrum disorders in offspring, *JAMA Pediatr* 174 (2020) 1168–1175.
- [9] R. Magoon, Impending cognitive and functional decline in COVID-19 survivors. Comment on, *Br. J. Anaesth.* 126 (2021) 44–47, <https://doi.org/10.1016/j.bja.2020.12.009> [ahead of print December 9] *Br J Anesth* 2020.
- [10] N. Choudhary, K.N. Saxena, B. Wadhwa, R. Magoon, Labour analgesia in cardiac parturients: a personalised approach!, *Indian J. Anaesth.* 64 (2020) 999–1001.
- [11] N. Choudhary, K.N. Saxena, B. Wadhwa, Labor analgesia with intradermal sterile water block in a patient with dilated cardiomyopathy, *J Obstet Anaesth Crit Care* 8 (2018) 96–98.

Rohan Magoon, Nitin Choudhary*

Department of Anaesthesia, Atal Bihari Vajpayee Institute of Medical Sciences (ABVIMS) & Dr. RML Hospital, New Delhi, 110001, India

KirtiNath Saxena

Department of Anaesthesia and Intensive Care, Maulana Azad Medical College, New Delhi, India

* Corresponding author. Flat No.-1601, Gardenia Gitanjali Apartments, Vasundhara sector-18, Ghaziabad, 201012, Uttar Pradesh, India.

E-mail address: drnitinchoudhary86@gmail.com (N. Choudhary).

29 October 2020