



Comparison of Epidural Infusion Methods for Labour

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1. Introduction

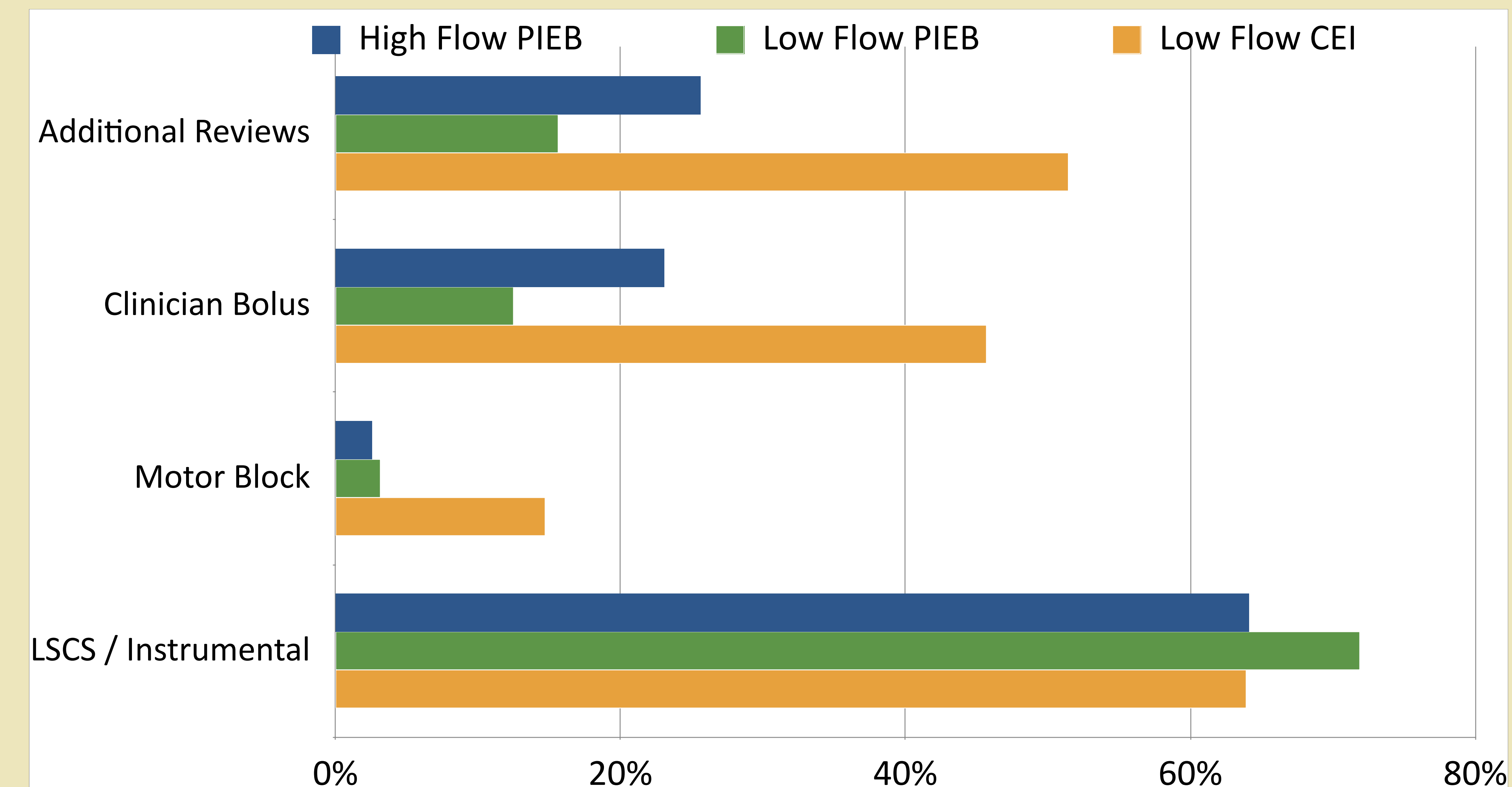
- Epidural analgesia for labour is routinely delivered in our centre using high-flow infusion sets using PIEB*/PCEA** programme.
- Due to challenges with supply chains, we used low-flow infusion sets with two programmes - CEI***/PCEA (adopted from general surgery) and PIEB/PCEA (approved later).
- This provided us a unique opportunity to compare the effectiveness of all the delivery methods.

2. Methods

- Data was collected using 106 records retrospectively.
- 39 women received epidural analgesia via high-flow sets using PIEB/PCEA, 32 via low-flow sets using PIEB/PCEA and 35 via low-flow sets using CEI/PCEA.
- We looked at the impact on anaesthetic service, neurological observations and outcome of labour.
- Fisher's Exact Test used to compare the difference.

3. Results

- Women on CEI/PCEA required more anaesthetic reviews ($p = 0.003$) and clinician boluses ($p = 0.005$) compared to those on PIEB/PCEA via both the sets.
- Frequency of motor block during labour was higher with CEI/PCEA ($p = 0.03$).
- The incidence of Caesarean section was comparable across the groups.
- The need for instrumental delivery was lower with CEI/PCEA (13.9%) compared to PIEB/PCEA (28.2%) but this difference was not statistically significant ($p = 0.15$).
- The combined incidence of Caesarean section and instrumental delivery was similar for CEI/PCEA and PIEB/PCEA (65.7% and 67.6% respectively).
- The high-flow and low-flow sets using PIEB/PCEA had comparable outcomes in all aspects.



4. Discussion

- The comparable outcomes of high-flow and low-flow sets with PIEB/PCEA programme suggests that ***low-flow sets are a suitable alternative***.
- CEI/PCEA had significant negative impact on anaesthetic service and neurological observations. This is consistent with the existing literature¹.
- The outcome of labour was comparable across all the groups.

Abbreviations:

- *PIEB - Programmed Intermittent Epidural Bolus
- **PCEA - Patient Controlled Epidural Analgesia
- ***CEI - Continuous Epidural Infusion

Reference:

1. Xu, J., Zhou, J., Xiao, H. et al. A Systematic Review and Meta-Analysis Comparing Programmed Intermittent Bolus and Continuous Infusion as the Background Infusion for Parturient-Controlled Epidural Analgesia. Sci Rep 9, 2583 (2019).