18. Failed epidural 'top-ups' for emergency cesarean sections: incidence and risk factors

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Background and Aims: Epidural analgesia during labour can be extended to provide anaesthesia for emergency cesarean section (Em CS). Failure of epidural extension may require emergency institution of general anaesthesia (GA), increasing maternal morbidity and mortality. The aim of this study is to identify the incidence and risk factors for failed labour epidural augmentation ('top-ups') for Em CS.

Methods: After hospital ethics committee approval, we retrospectively reviewed the records of all parturients who received labour neuraxial analgesia, subsequently requiring Em CS, over 18 months (05/01/05 to 10/31/06). Failure of extension of epidural analgesia, defined as the need for conversion to GA, was noted and its incidence calculated. Parturient's biodata, epidural technique, anaesthetic protocol and obstetric/surgical conditions were gathered. Statistical analysis was performed using Chi-sq/Fisher exact test and t test to compare the data, between the 'successful group' where cesarean section is performed under epidural 'top-up' and the 'failure group' requiring GA., taking $p<0.05$ to be significant. Multivariate logistic regression was used to determine the predictors associated with failed epidural anaesthesia.

Results: Of the 1033 parturients with labour epidural-in-situ requiring Em CS, 25 (2.42%) required GA conversion. Significant predictors of failed 'top-ups', were 1) Prostin induction of labour($p=0.03$), 2) Plain epidural compared to combined spinal epidural (CSE) technique ($p=0.001$), 3)Two or more breakthrough pains requiring interventions ($p=0.001$). In multivariate analysis, plain epidural technique and occurrence of more than 2 episodes of breakthrough pains were the best predictors of failed epidural 'top-ups' for Em CS (OR, 4.17, $p=0.002$, CI 1.71-10.16; and OR 4.717, $p=0.008$, CI 1.49-14.95 respectively).

Conclusion: The incidence of failed extension of epidural analgesia for Em CS is 2.42% in our institution. The most likely risk factors associated with failure are the use of plain epidural technique and two or more breakthrough pains, possibly related to suboptimal catheter placement.

336. A randomised (RCT) comparison of 0.5% levobupivacaine with lignocaine/ fentanyl/epinephrine mixture for epidural top-up for emergency caesarean section after epidural labour analgesia

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Background and Aims: Obstetric regional anaesthesia includes mainly spinal and epidural anaesthesia. Most pregnant patients prefer "low dose" epidural analgesia during labour. For various reasons, if those patients did have emergency caesarean section, we commonly advocate Lignocaine/fentanyl/epinephrine mixture (LEF) for epidural top-up to achieve an anaesthetic effect. Levobupivacaine is now commonly used for epidural top-up for emergency caesarean section. We decided to compare our standard epidural top-up solution with 0.5% levobupivacaine in those patients

Materials and Methods: In a prospective, randomised controlled, single blind study, we compared 0.5% levobupivacaine (50 patients) with LEF mixture (50 patients) for epidural top-up in 100 patients. We obtained Ethics approval and CTA certificate from MHRA in order to maintain ICH GCP standards. We compared the time taken for preparing the mixture, time duration to achieve T6 for touch (anaesthesia level), total time, supplementation rates and complications.

Results: One patient had spinal anaesthesia as the block was not sufficient even after 35 minutes in levobupivacaine group. Preparation time was statistically significant among the groups (Levo group [56.8±17.57 sec], LEF group [150.2±51.85 sec]). Time from top-up to T6 was also statistically significant (Levo group [15.2±6.2 min], LEF group [10.7±5.03 min]), but the time from start of preparation of mixture to T6 was not statistically significant (Levo group [18.92±6.37 min], LEF group [17.7±5.9 min]). Supplementation rates were significantly higher in Levo group (14/49 patients) but only (6/50 patients) in LEF group. All other parameters were comparable among the groups.

Conclusion(s): 1) Speed of onset was faster and 2) intraoperative supplementation with opioids or entonox was significantly less with LEF group. In order to get clinical benefit time-wise, we would need to have LEF mixture ready and drawn up.

References

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