



A COMPARATIVE STUDY OF THE OUTCOME OF CESAREAN SECTION FOR WOMEN WITH PRE-ECLAMPSIA UNDER SPINAL VERSUS EPIDURAL ANAESTHESIA IN RIMS RAIPUR

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ABSTRACT

Women with pre-eclampsia have an increased rate of cesarean section consequent upon the high incidence of intrauterine growth restriction, fetal distress and prematurity. We compared the outcome of Cesarean section for pre-eclampsia using sub-arachnoid block and epidural anaesthesia. Our study was carried out in RIMS RAIPUR CG from Jan.2014 to July 2016. Unit of study were all the women with preeclampsia who underwent caesarean section for delivery under spinal or epidural anaesthesia and their babies. chi square test and student t-test were applied for statistical analysis. There was no significant difference between two groups in overall maternal mortality (0.0% vs 2.4%, $p > 0.05$), perinatal mortality (5% vs 7.1%, $p > 0.05$), Apgar score less than 7 at 1 minute (25% vs 21%, $p, 0.05$) and Apgar score less than 7 at 5 minute (5% vs 14.3%). No significant difference in the maternal and perinatal mortality outcome of cesarean delivery between women with preeclampsia who had epidural and those that had spinal anaesthesia.

KEYWORDS : Cesarean section, spinal anaesthesia, epidural anaesthesia, pre-eclampsia, perinatal mortality.

Introduction

The symptoms and complications of pre-eclampsia are well known and far-reaching, the exact etiology remains unknown. It accounts for 5-10% of all pregnancies. Women with pre-eclampsia have an increased rate of cesarean section consequent upon the high incidence of intrauterine growth restriction, fetal distress and prematurity. Cesarean section on the other hand increases the risk of cardiopulmonary morbidity associated with pre-eclampsia. This is due to the altered hemodynamics in women with pre-eclampsia. This risk is present with both spinal and epidural anaesthesia. Epidural anaesthesia has been accepted as the preferred anaesthetic technique for caesarean delivery in severely preeclamptic patients among both an anaesthesiologist and obstetrician. Physician in most developing countries are still restricted to either spinal or general anaesthesia. This is due to high cost and unavailability of epidural sets and scarcity of personnel with the requisite skills for epidural anaesthesia. Spinal anaesthesia can be performed faster, has fewer complications, and is more cost effective for uncomplicated caesarean delivery. However, several studies have demonstrated the safety of sub-arachnoid block (spinal), epidural and combined sub-arachnoid block-epidural anaesthesia for Cesarean section in women with pre eclampsia. The optimal anaesthetic method for Cesarean section for women with pre-eclampsia remains unsettled. This underscores the need for studies to compare the outcome of Cesarean section using sub-arachnoid block and epidural anaesthesia as this will help physicians practicing in developing countries in decision-making. This study compared the outcome of Cesarean section for pre-eclampsia using sub-arachnoid block and epidural anaesthesia.

Material and Methods

Our study was carried out at RIMS RAIPUR, one of the tertiary care hospital CHHATTISGARH, with the objective to compare the outcome of Cesarean section for pre-eclampsia using sub-arachnoid block and epidural anaesthesia. Study period was from January 2014 to July 2016. Target population were the women with preeclampsia who underwent caesarean section for delivery. The semi-structured schedule for entering the details of mother and baby was prepared. Unit of study were all the women with preeclampsia who underwent caesarean section for delivery under spinal or epidural anaesthesia and their babies with following exclusion criteria: Women with other medical disorders in pregnancy, caesarean section under general anaesthesia, multiple

pregnancies, gestational age less than 32 weeks, and cases of failed sub-arachnoid block that were reverted to general anaesthesia. Pre eclampsia is defined as a multisystem disorder of unknown etiology characterized by development of hypertension to the extent of 140/90 mm Hg or more with proteinuria after the 20th week in a previously normotensive and non proteinuric women. 100 Booked Case: Booked case is one who had taken at least three antenatal visit at the study center. The necessary information was collected on semi structured schedule. The information collected include maternal age, parity, gestational age at delivery, booking status, indication for caesarean section, anaesthesia used, Apgar scores, maternal mortality and perinatal mortality. Data analysis: The subjects were classified into two categories: Group A was patients that had spinal anaesthesia while group B comprised of patients that had epidural anaesthesia. After covering all the target population the data was coded and entered in SPSS version 10.0 statistical software. The data base so prepared was analysed and the results were transferred to predesigned classified tables prepared according to the aims and objectives of the study. Valid inference was drawn and the results were discussed with the available studies. The background characteristics and outcomes were compared between the two groups using chi square test and student t-test. Differences were considered significant if $P < 0.05$.

Discussion

Anesthetists may be required to assist with pain management in labor, to provide anaesthesia for Cesarean section and to assist in the Intensive Care Management of life-threatening complications which may arise from this condition. In our study 67.7% of the study subjects receive spinal anaesthesia and the remaining (32.3%) receive epidural anaesthesia. In one of the multicentric prospective study conducted by Shusee et al and in retrospective study by Obinna et al this percentage of patients receiving spinal anaesthesia is much low as compare to our study (52.2% and 38.5% respectively). In present study the most common indication for cesarean section in preeclamptic patient was fetal distress (37.1%) followed by unfavourable cervix (24.2%) where as in one of the retrospective study conducted in developing country by Obinna et al unfavourable cervix (74.0%) was the most common cause for preeclamptic women to undergo cesarean section. There was no significant difference in the background maternal characteristics. This is consonance with Shusee et al study.

Result

In our study apgar score less than 7 at 1 min in spinal anaesthesia was found to be 21% and apgar less than 7 at 5 min was 14.3%. Obinna et al in their study found apgar score less than 7 at 1 min. more than our study (27%) and apgar score less than 7 at 5 min. slightly less (13.5%) than our study. Perinatal mortality was found to be more (7.1%) in our study under spinal anaesthesia as compare to Obinna study (2.7%) where as maternal mortality was slightly more in Obinna study (5.4%) as compare to our study (2.4%). Statistically no significant difference was found in outcome of Cesarean section in term of apgar score, perinatal mortality and maternal mortality for pre-eclampsia using sub-arachnoid block and epidural anaesthesia. The neonatal outcomes assessed by apgar score and the umbilical arterial blood gas analysis in Shusee et al study was also similar in both groups. Similar to our study Chiu et al also observe no difference in maternal and neonatal outcome in their study. Mean gestational age at delivery 38 ± 1.7 38 ± 2.2 >0.05 Booked patients 15 (80%) 36 (85.7%) >0.05 Nulliparity 12 (60%) 22 (52.4%) >0.05 Apgar score < 7 at 1 minute: Five babies (25%) in group A and nine babies (21%) in group B had Apgar scores less than 7 at 1 minute. Apgar score < 7 at 5 minute: One baby (5%) in group A and six babies (14.3%) in group B had Apgar scores less than 7 at 5 minute. No maternal death was recorded in group A and only one (2.4%) death was recorded in group B. Perinatal mortality: One (5%) perinatal death was recorded in group A and three (7.1%) in group B.

Conclusion

In our study, there is no significant difference in the maternal and perinatal outcome in terms of apgar score, perinatal mortality and maternal mortality of cesarean delivery between women with preeclampsia who had received epidural anaesthesia and those that had spinal anaesthesia.

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