

Anaesthetic Management of Patient with Nephropathy and Multiple Co-Morbid Conditions

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Abstract :

Anaesthetic management of a primigravida with chronic kidney disease, IgA Nephropathy and patent ductus arteriosus is challenging. Complications of spinal anaesthesia occurring in such patients are more challenging to treat. Safe anaesthetic management requires adequate preoperative assessment, optimization and planning.

Keywords : Chronic Kidney Disease, Pregnancy, Ropivacaine

Introduction:

Obstetric anaesthesiologists deal with unique challenges. Pregnancy itself is considered as ASA (American Society of Anesthesiologists) grade II. Risk of maternal mortality in patients with chronic kidney disease, congenital heart disease and Pregnancy Induced Hypertension is very high. Providing optimum perioperative care in patients with chronic kidney disease, congenital heart disease and pregnancy induced hypertension is quite challenging but through perioperative evaluation and optimization using multidisciplinary approach we can improve patient's outcome in such conditions.⁽¹⁻³⁾

Case report:

A 36 year old primigravida of 61.8kg weight and 162 cm height who was a known case of IgA nephropathy since 17 years presented with pregnancy induced hypertension and was admitted for elective lower segment cesarean section at 37 weeks of gestation. She was diagnosed with patent ductus arteriosus on preoperative evaluation.

During pre-anaesthetic checkup, patient had adequate mouth opening with Mallampati score II and normal dentition. Spine was normal. Clinical systemic examination of respiratory system and central nervous

system examination was normal. Patient did not have any cardiac complaints and was devoid of any audible murmurs. Vitals: Oral Temperature- 97.8°F, Pulse- 78/min, regular, BP-150/100 mm Hg, SpO₂ 99% on room air, Respiratory Rate-14/min.

Laboratory investigations:

Hb-9.3 gm/dl, TC-9800 cells/cumm, PC-2.3L/cumm, Serum creatinine 3.08, urine albumin +3, Serum Na136, Serum K 5.16, Serum Phosphorus 3.23, Serum magnesium 1.99, Serum calcium 8.5, Uric acid 11.6, Blood Urea 61.2. Coagulation profile was within normal limit. She had no history of dialysis and was only on medical management for chronic kidney disease and pregnancy induced hypertension. She was taking T. Omega 3 Fatty Acid, OD, T. Prednisolone 5mg OD since 2 years, T Sodium Bicarbonate 500mg BD since 3 years, T. N-acetylcysteine and Taurine. Her ECG was within normal limit. Her 2D echo revealed Congenital Heart Disease, moderate Patent Ductus Arteriosus with Left to Right shunt, Main Pulmonary Artery dilatation, LVEF 60%, and RVSP 24mmHg. ASA grade III was assigned and informed high risk consent was taken.

Preoperatively, she was given Inj. Soda Bicarbonate 20ml IV 8 hourly, Inj Erythropoietin 10000 IU, Inj Dexamethasone 8mg, T. Labetalol 100 mg and T. Nifedipine 20mg. Normal Saline was given at the rate of 60ml/hr during NBM (nil by Mouth) period. In the Operation theatre, two peripheral large bore intravenous cannulae were secured; Vitals at induction were BP 160/106 mmHg, Pulse 90/min, and regular SpO₂ 98% on RA.

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Under all aseptic precautions in sitting position, painting and draping was done, after palpation of L3-L4 space with 25 G quincke spinal needle, inj. Ropivacaine 0.75% heavy, 2.2ml was given intrathecally. T6 level was achieved and patient was given O2 by by venti mask at the rate of 4L/min. After delivery of baby, Inj. Oxytocin 20 IU and Inj. Carbetocin 100mcg was given. Total duration of surgery was 1 hour 30 minutes during which 750 ml of fluid was given, estimated blood loss was 700 ml and Urine output was 100ml,

For post operative analgesia USG guided bilateral TAP block with Inj. Ropivacaine 0.2% 20ml on each side was given. A healthy male child of 2.3 kg was born, he cried immediately after birth. Initial assessment did not reveal any congenital heart, renal anomaly in the newborn.

Discussion:

Pre anaesthetic check up serves as the backbone for peri operative management of patient. Adequate preoperative optimisation of patient has shown to reduce the intraoperative risks and leads to better patient outcomes especially in high risk patients. Single shot spinal anaesthesia with careful dose, can be safely given in such cases, it avoids the complications

associated with GA maintains uteroplacental blood flow, improves maternal and neonatal outcome, provided there is effective monitoring preoperatively and intraoperatively especially for side effects like high-spinal anesthesia and hypotension. Ropivacaine 0.75% heavy was used in this case as it is associated with better hemodynamic profile.⁽⁴⁾

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