

Aneasthetic Management of Primigravida with Moderate Anemia with Thick MSL for Caesarean Section under Regional Anaesthesia

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Abstract: Anaemia in pregnancy defined as haemoglobin (Hb) level of < 10 gm/dL, is a qualitative or quantitative deficiency of Hb or red blood cells in circulation resulting in reduced oxygen (O₂)- carrying capacity of the blood. Preoperative evaluation is aimed at assessing the severity and cause of anaemia. The main anaesthetic considerations are to minimize factors interfering with O₂ delivery, prevent any increase in oxygen consumption and to optimize the partial pressure of O₂ in the arterial blood. Both general anaesthesia and regional anaesthesia can be employed judiciously. We report here in 30 year old primigravida booked case with POG 39 weeks with moderate anemia with thick MSL with adequate fetal heart rate posted for Caesarean section under regional anaesthesia.

Keywords: Anaemia, Hypoxia, Anesthesia

1. Introduction

Anaemia in pregnancy can also be classified as mild, moderate or severe, with WHO classifying mild anaemia as Hb level of 10.0-10.9 gm/dL, moderate anaemia as 7-9.9 gm/dL and < 7gm/dL as severe anaemia. Parturients with concomitant medical diseases or those with acute ongoing blood losses may get decompensated, leading to serious consequences like right heart failure, angina or tissue hypoxemia in severe anaemia. Preoperative evaluation is aimed at assessing the severity and cause of anaemia. The concept of an acceptable Hb level varies with the underlying medical condition, extent of physiological compensation, the threat of bleeding and ongoing blood losses. The main anaesthetic considerations are to minimize factors interfering with O₂ delivery, prevent any increase in oxygen consumption and to optimize the partial pressure of O₂ in the arterial blood. Both general anaesthesia and regional anaesthesia can be employed judiciously. Monitoring should focus mainly on the adequacy of perfusion and oxygenation of vital organs. Hypoxia, hyperventilation, hypothermia, acidosis and other conditions that shift the ODC to left should be avoided. Any decrease in CO should be averted and aggressively treated.

2. Case Report

30 years old primigravida with POG 39 weeks with easy fatigue ability and breathlessness on exertion since 1 week, previously the patient was able to do her workout now from 2 days there is increased breathlessness with ghabrahat. Patient was booked case with hb 7.8 gm/dl, p/s microcytic hypo chromic anaemia with low socioeconomic status, plt >1 lac. Systemic and obstetric examination were normal. Airway assessment done. On per vaginal examination thick meconium stained liquor present with fetal heart sound 130-170 bpm. Before taking pt in OT fresh written informed consent was taken explaining anaesthesia risk, anti-aspiration prophylaxis given and difficult airway cart was prepared.

Aneasthetic plan decided for spinal anaesthesia with adjuvant. Patient taken in OT table under ambient room temperature, standard monitoring attached, iv line secured and iv fluid started. Patient lying in left lateral position painting with betadine done for 3 min then cleaned with spirit to maintain asepsis. 26 gauge Quincke's needle inserted in L4-L5 intervertebral space and free flow of cerebrospinal fluid noted and then bupivacaine 0.5% heavy 2 c.c + inj. Fentanyl 25 mcg given. Sensory and motor blockade level until T4 achieved and surgery followed. Injection oxytocin infusion started 10IU in 500 ml after delivery of baby. Intraoperatively blood loss was monitored was around 700ml, patient remained hemodynamically stable and surgery went uneventful. 1 unit cross matched whole blood was transfused slowly under monitoring. Urine output was around 60 ml. Surgery lasted for 1 hour. Patient was shifted to PACU and postoperative period remain uneventful. Post op blood sugar, serum electrolytes and hb done.

3. Discussion

Choice of anaesthesia will depend on the severity and type of anaemia, extent of physiological compensation, concomitant medical conditions, type and nature of procedure and anticipated blood loss. The main anaesthetic considerations in chronic anaemia are to minimize factors interfering with O₂ delivery, prevent any increase in O₂ consumption and to optimize the partial pressure of O₂ in the arterial blood. Central neuraxial blocks can be judiciously employed using either a low-dose spinal anaesthesia along with adjuvants or an intermittent dosing, continuous epidural. These are advantageous in providing good analgesia, ability to provide supplemental O₂, and decreased blood loss with stable haemodynamics. However, central neuraxial blocks are fraught with imminent dangers of hypotension, haemodilution and subsequent heart failure or pulmonary oedema on the return of vascular tone. It is advisable to use vasoconstrictors to sustain blood pressure. Monitoring should be aimed at assessing the

adequacy of perfusion and oxygenation of vital organs. It should include routine monitors like ECG, NIBP, EtCO₂, Temperature monitoring, Pulse oximetry, urine output and may include CVP, invasive arterial blood pressure monitoring, ABG analysis and measurement of mixed venous PvO₂ in severe anaemia wherein major blood losses are anticipated like in placenta previa or accreta etc. Serial Hb and Haematocrit values can guide us to monitor ongoing blood losses.¹

4. Conclusion

The anaesthetic implications of anaemia in pregnancy are based on the understanding of the normal and compensatory mechanisms that optimize tissue oxygenation. The main aim is to maintain a fine balance between the compensatory mechanisms and adequate tissue oxygenation in these parturients. Both regional and general anaesthesia can be used judiciously. Monitoring should aim at assessing the adequacy of perfusion and oxygenation and the magnitude of ongoing losses. Deleterious effects of chronic tissue hypoxemia along with threat of major blood losses in the perioperative period need to be anticipated and treated adequately.

Conflict of Interest: Nil

References

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