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# A Case of Jehovah's Witness for Emergency Lower Segment Caesarean Section with Global Left Ventricular Hypokinesia

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**Abstract:** ***Jehovah's Witnesses represent a unique medical population, in relation to their opposition to blood transfusion. With obstetric hemorrhage being the major cause of maternal mortality, pregnant Jehovah's Witnesses are in exceptional jeopardy. A 34 year old Jehovah's witness, diabetic female, registered ANC, G2A1 at 38weeks was admitted prior to LSCS (Lower segment caesarean section) with history of breathlessness since 2 months. Prior cardiac evaluation showed global left ventricular hypokinesia with Ejection Fraction of 25%. Decision for emergency LSCS was made in view of non reassuring non stress test. On day of surgery, patient was induced under low dose spinal - epidural after securing central venous access under local anaesthesia. Procedure was performed by a skilled obstetrician and recovery was uneventful.***

**Keywords:** Jehovah's witness, Lower segment caesarean section, Low dose spinal – epidural

## 1. Introduction

The combination of the potential for major haemorrhage and the limitation of blood product administration makes the pregnant Jehovah's Witness a challenge for the anaesthetist. It is of paramount importance for clinicians to understand the relevant ethical and legal constructs and to be well versed in the management and alternatives available to this population.

According to Jehovah's witnesses' interpretation of the Bible, it is prohibited to ingest blood of any kind. It is up to the conscious of each individual to accept transfusions of fractionations of the primary components. Especially obstetric patients with less cardiac reserve are at higher risk for perioperative complications and need of blood transfusions. This creates a difficult situation for the patient and for the doctor who is legally bound to provide best medical care to every patient

## 2. Case Description

A 34 year old diabetic female, registered ANC, G2A1 at 38weeks was admitted prior to LSCS with history of breathlessness since 2 months. Patient had dyspnoea on exertion (effort tolerance< 1flight). Progressed from NYHA grade 1 to NYHA grade 2. Patient had a past history of diabetes since 4 years and was on medications and a history of spontaneous abortion 4 years back.

Patient had a BMI of 27.9Kg/m2. However, the general examination and airway examination did not show any abnormality. All the lab investigations were within normal limits but her HBA1C was found to be 8.2%.

Prior cardiac evaluation showed global left ventricular hypokinesia with Ejection Fraction of 25%. Decision for emergency LSCS was made in view of non reassuring non stress test. Just prior to surgery, while taking consent patient was found to be a Jehovah's witness.

**Preoperative Course -**
After counselling the patient and relatives, audio and written high risk consent was taken. Availability of ICU/Ventilator was confirmed. All emergency drugs, cardiac drugs and defibrillator were kept ready. Difficult airway cart was kept ready.

**Intraoperative Course -**
Patient was taken inside and all standard ASA monitors were attached. Patient was vitally stable.18G iv was secured on upper extremities before induction. Oxygen was supplemented with Hudson mask. Antifibrinolytic injection tranexamic acid 1g slow IV wasgiven. Triple lumen central line was secured under local anaesthesia under USG guidance in right IJV before induction.

Induction was done with Low dose spinal and epidural anaesthesia in sitting position with combined spinal epidural set at L4 - L5 space with injection bupivacaine heavy 0.5% 1.2cc. Patient was made supine and adequate level of anaesthesia was achieved.
CVP guided fluid therapy was given with strict fluid and blood loss monitoring. Procedure done by skilled obstetrician to minimize blood loss. Baby cried immediately after birth and the APGAR was 9/10.10IU injection oxytocin given slowly in 100ml normal saline.

**Postoperative Course**
Procedure was completed within 1.5hours and the patient was vitally stable post operatively and shifted to HDU and observed.

## 3. Discussion

Elective surgery for Jehovah's Witness patients should be conducted by a senior team sensitive to the patient's beliefs

and with experience in techniques of 'bloodless surgery'. All risks should be explained and 'rules' for management established at the outset. All Jehovah's Witness patients should undergo assessment and discussion with senior consultant haematology, obstetric and anaesthetic staff [1].

The patient's preoperative status should be optimized to reduce the risks of intraoperative haemorrhage. Limiting phlebotomy to necessary diagnostic testing should be done.

Laboratory investigations which include serum ferritin, peripheral blood smear and faecal microscopy to help with perioperative improvement should be done. Special attention should be paid to haematology (including haemoglobin concentration, platelet count and clotting studies). A low preoperative packed cell volume (PCV) increases the need for perioperative transfusion.

The presurgical use of recombinant Erythropoietin has proved useful in patients in whom autologous donation of blood is not feasible, including those with anaemia, those with limited time to donate and those unable to participate because of logistical problems or religious beliefs, such as Jehovah's Witnesses. Erythropoietin stimulates the bone marrow to maximise red blood cell production. Not all Jehovah's Witnesses will accept this medication because the drug is packaged with 2.5mL of albumin per dose [2]. Anticoagulant and antiplatelet drugs should be reviewed and, where possible, stopped. Nutritional status should be optimized with the use of supplemental enteral feeding or total parenteral nutrition, if necessary. In addition, high - dose oral iron should be supplemented to correct any iron deficiency, and folate and vitamin B12 should be administered secondary to increased erythropoiesis. (3) Options available as alternatives to red blood cells include prevention of anaemia to maintain haematocrit above 40% [4]. Tranexamic acid was used for patient, which is a commonly used medication for patients experiencing bleeding intraoperatively. Anti - embolic deterrent stockings can be used to prevent thrombosis.

Acute normovolaemichaemodilution is often unacceptable to Jehovah's Witnesses, as it involves the removal and storage of blood before haemodilution. An alternative is acute hypervolaemichaemodilution (AHH), which involves rapid infusion of fluid to achieve haemodilution without withdrawal of blood. Conventional cell savers are available that process the blood in batches, thereby breaking continuity with the body, they are not acceptable to Jehovah's Witness patients. However, newer technology that processes in continuous fashion is able to sustain an uninterrupted circuit of blood, increasing acceptability among these patients. (5) Haemostatic surgical instrument like electrocautery, argon beam coagulator, ultrasonic scalpel, radiofrequency thermal ablation, water jet dissector and micro wave device and laser can be used. Topical haemostatic agents, such as fibrin glue, platelet gel, collagen hemostat, gelatin foam, calcium alginate, surgical and oxycelcan be used, if available. Use of warm fluids, regulation of theatre temperature and adequate draping to avoid hypothermia should be done. Regionalanaesthetic techniques have been shown to reduce surgical blood loss and should be recommended if appropriate.

Close monitoring of the patient is essential to detect postoperative bleeding early and institute corrective measures. After massive blood loss, the patient will require admission to the intensive - care unit (ICU). This should be anticipated and elective surgery only commenced if an ICU bed is available (6)

## 4. Conclusion

All options should be discussed and a management plan should be clearly documented. The cornerstones of Jehovah's Witness patient management include educating the patient about blood conservation techniques, optimizing cardiopulmonary status, correcting both anemia and coagulopathy preoperatively, collecting autologous blood perioperatively, and minimizing intraoperative blood loss. By using certain preoperative and intraoperative techniques, the anesthesiologist can steer the patient toward the best postoperative outcome.

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