

Perioperative intravenous iron sucrose and erythropoietin therapy for hysterotomy and myomectomy in a jehova witness

Abstract

Jehovah's Witness persons don't accept blood transfusion due to religious objections. Hence, alternative should be used to avoid blood transfusion for surgery on them. We present, a case in which iron sucrose and erythropoietin was successfully used to raise Hb level and blood transfusion could be avoided.

Volume 2 Issue 2 - 2017

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Received: November 11, 2016 | **Published:** April 06, 2017

Introduction

Jehova witness is religious sects who don't accept blood transfusion due to religious objections.¹ Alternatives to blood transfusion have to be used for surgeries in them.¹ Recombinant erythropoietin therapy with intravenous sucrose may be an appropriate therapy for them to raise hemoglobin levels for coping up blood loss during surgery.² Traditionally erythropoietin is used for renal disease with anemia but has also been tried for non renal disease where iron therapy alone fails to give adequate results.^{2,3} Alterations in various hematological indices and in erythropoietin levels have been observed in anemia and in pregnancy.⁴

Case report

Mrs. S.B., 25year old staff nurse a Jehova witness by religion was admitted with 23weeks pregnancy with large fibroid uterus with leaking per vaginum. On examination she had no pallor, jaundice,

edema or lymphadenopathy. Her temperature was 37.2°C. Her cardiovascular and respiratory systems were normal. Abdominal examination revealed uterus to be 28weeks size with palpable fetal parts with no tenderness. On speculum examination there was clear amniotic fluid coming out through cervix. Her investigation and ultrasound reports are shown in Table 1. She was started on intravenous antibiotics using amoxicillin 500 iv 8 hourly with metronidazole 500mg iv 8 hourly. However, her condition worsened. She had fever (38.2°C). Her pulse was 82beats per minute. Her leucocytes count increased and C Reactive protein also increased. High vaginal swab grew Streptococcus β hemolytic and mixed bacterial growth. As she and her husband refused to accept blood transfusion due to religious objection, she was started on intravenous iron sucrose 400mg twice a week. She was also given subcutaneous recombinant erythropoietin therapy on alternative days (6000units for 3 doses: total 18000units). Her hemoglobin was raised to 13.3g/dl (2.5 g/dl rise).

Table 1 Characteristics and investigations of the patient

Characteristics		
Age	25years	
Socioeconomic Status	Moderate	
Pulse	78bpm	
Blood Pressure	120/ 72 mm Hg	
Temperature	37.2	
Heart chest	Normal	
Abdominal Examination	Uterus 28 weeks with large fibroid felt in lower part.	
Investigations		
	On admission	After 1 week
Hb (g/dL)	10.8 g/dl	13.3g/dl
Total leukocyte count/cml	11282/cml	18786/cml

Table Continued..

Investigations

	On admission	After 1 week
Differential leukocyte count	P72 L26 E2 B 0	P88 L11 E1B 0
Creative protein	NAD	Streptococcus beta haemolyticus and mixed Bacterial growth
Vaginal wall	Single live fetus of 23 weeks-fetal heart present-- Amniotic fluid index 4.0	Single live fetus of 24 weeks-fetal heart present-- Amniotic fluid index 2.0
Ultrasound	Large 10×8 cm fibroid in lower part of uterus	Large 10×8 cm fibroid in lower part of anterior wall of uterus

Patient was counseled about prognosis of fetus and risk of chorioamnionitis. She agreed for termination of pregnancy. As cervix was unfavorable, Dinoprosterone gel was inserted in cervix and repeated after 6 and 12hours. Oxytocin drip was also started. However, cervix did not dilate and there was no progress of labor. As her condition was deteriorating and signs of chorioamnionitis had developed, decision to perform hysterotomy was taken.

She was started on intravenous coamoxyclav and metronidazole therapy. Hysterotomy was performed. However, while performing hysterotomy, the large fibroid came in incision line. Though myomectomy was not planned, but it was not possible to perform hysterotomy as fibroid was occupying whole of anterior wall of uterus. Myomectomy had to be performed and a 10×8cm myoma was easily enucleated from the myometrium. Incision was then extended and a fetus weighing 380gm was extracted through hysterotomy incision. There was foul smelling liquor. Uterus was closed in two layers with polyglactin (vicryl) stitch. Abdomen was closed in layers. Estimated blood loss was 800ml. Patient was given intravenous amikacin and gentamycin in perioperatively. She recovered well and was discharged in good condition on fifth operated day. Her fever had settled down. Her Hb at discharge was 10.8g/dl.

Discussion

Anemia during pregnancy continues to be a major health problem in low income countries.¹ The main reason for high prevalence in anemia in developing countries are consumption of diet rich in phytates and low in ascorbic acid and heme iron as most women consume vegetarian diet.^{1,5} Other causes are high prevalence of worm infestation and amebiasis in developing countries.⁶ Anemia during pregnancy should be taken seriously as it may adversely affect maternal and perinatal outcome.⁷

Standard treatment is by oral iron with parenteral iron being restricted to patients who cannot tolerate oral iron or near term.⁴ In current practice iron sucrose and ferric carboxymaltose for infection are given intravenously due to the better efficacy and lower risk of anaphylaxis and other side effects.⁸⁻¹⁰ Blood transfusion is needed for severe anemia near term, for ante partum or postpartum hemorrhage and for surgery. Placenta previa is also a condition where caesarian section is associated with hemorrhage, needing blood transfusion.² Erythropoietin can be given to placenta previa cases before surgery to raise Hb to cover blood loss of caesarian section.^{2,3} Jehova witness patients don't accept blood transfusion due to religious objections. Hence alternative to blood have to be given to them. Recombinant erythropoietin traditionally used for renal disease, can be used in such

patients.^{2,3} As erythropoietin stimulates bone marrow, oral iron is not adequate necessitating intravenous iron. As carboxyl polymaltose is not licensed for use during pregnancy iron sucrose is more suitable. We used two doses of 400 mg of iron sucrose intravenously with 18000units of recombinant erythropoietin as 3doses each on alternate day which raised the Hb by 2.5g/dl obviating the need for blood transfusion. Although there was blood loss of 800ml, blood transfusion could be avoided. Recombinant erythropoietin and intravenous iron sucrose have been used for postpartum anemia also.^{2,3} Hence, erythropoietin therapy can be used as an alternative to blood transfusion in patients who cannot accept blood transfusion.

Conclusion

Jehova witness patients don't accept blood transfusion due to religious objections. Alternatively, to blood transfusion have to be used in them to save lives. Erythropoietin therapy in dose of 6000units' s/c for three doses on alternate days along with intravenous iron sucrose (400mg twice weekly) can raise the Hb before any planned surgery on them. It tides over the crisis of bleeding and obviating the need of blood transfusion as was done in the present case.

Acknowledgements

None.

Conflict of interest

Author declares that there is no conflict of interest.

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