

# Non-blood management of severe anaemia in pregnant human immunodeficiency virus positive Jehovah's Witness patients in the University of Port Harcourt Teaching Hospital, Port Harcourt, Nigeria

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## Abstract

**Background:** Blood transfusion is clinically used to treat severe anaemia, but some people refuse it for its adverse effects and religious reasons.

**Aim:** To present two Jehovah's Witness pregnant human immunodeficiency virus (HIV) positive women who were managed successfully without blood at the University of Port Harcourt Teaching Hospital.

**Methods:** Case series - The first case, a 27-year-old Jehovah's Witness woman was found to be retropositive with severe anaemia. She had a packed cell volume (PCV) of 14% in her second trimester in pregnancy. She was treated with oral haematinics, and the PCV rose to 34% before an elective caesarean section. The second case was a 29-year-old Jehovah's Witness woman who was admitted for chronic cough and fever in her second trimester. On further investigation, she was found to have pulmonary tuberculosis, septicaemia and severe anaemia with a PCV of 17%. She declined blood transfusion and was managed with parenteral iron and erythropoietin. Both cases had safe deliveries with good fetomaternal outcome.

**Conclusion:** Pregnant patients who decline blood transfusion can be adequately managed if they register in the first trimester or the early second trimester and such cases need good team management and cooperation between the patient and the teams for a good outcome.

**Keywords:** Anaemia, Human immunodeficiency virus, Jehovah's Witness, Non-blood, Pregnant

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## INTRODUCTION

Blood transfusion is a well-known therapy for severe anaemia in clinical medicine. It is usually safe, and has benefits but is costly and has adverse effects.<sup>1</sup>

Some people refuse blood transfusion because of its adverse effects while others, such as the Jehovah's Witnesses refuse on religious grounds.<sup>1,2</sup>

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**Table 1: Packed cell volume levels of Case 1**

Date	PCV (%)
Visit 1	14
Visit 2	20
Visit 3	22
Pre-operative visit	34
Post-operative visit	26

PCV: Packed cell volume

We present two cases of pregnant human immunodeficiency virus (HIV) positive Jehovah's Witness women who had severe anaemia and were managed without blood transfusion.

## CASE REPORTS

### Case report 1

A 27-year-old Jehovah's Witness female, booked Gravida 2, Para 1, (not alive) was seen in the prevention of mother-to-child transmission (PMTCT) clinic with the complaints of frequent watery stools – four times daily, for 12 weeks on the 20<sup>th</sup> August 2009. She was found to be seropositive for HIV in her second trimester. She had booked in the first trimester.

She had severe anaemia at presentation – packed cell volume (PCV) of 14% (12<sup>th</sup> August 2009). Her PCV improved progressively with oral iron tablets, fersolate 200 mg three times daily and folate tablets 5 mg daily and counselling on her diet by the nurses and dieticians who work in the adult antiretroviral therapy (ART) clinic.

She was admitted for the elective caesarean section (C/S) for PMTCT on the 22<sup>nd</sup> January 2010 at 36 weeks with a PCV of 34%. When she was no longer anaemic as shown in Table 1.

She had elective C/S on 25<sup>th</sup> January 2010 with good fetomaternal outcome and stable vital signs and was discharged home on 1<sup>st</sup> February 2010. She had a normal puerperium and kept her postnatal appointment at 6 weeks.

### Case report 2

A 29-year-old Gravida 2, Para 1 (alive), Jehovah's Witness woman booked in the antenatal clinic at 14 weeks of gestation. She was admitted to the antenatal ward on the 1<sup>st</sup> January 2009 at 21 weeks gestation with a 16-week history of cough and 8-week history of high-grade fever associated with chills, 2-week history of haemoptysis, breathlessness and dysuria.

Physical examination revealed an ill-looking woman, pale and in respiratory distress. The blood pressure was 110/70 mmHg; the pulse rate was 100 beats/min. She had bronchial breath sounds and coarse crepitations in

the upper lung zone and hepatomegaly of 8 cm. below the subcostal margin, non-tender and smooth surface.

Samples were taken for full blood count, electrolytes, urea and creatinine, liver function tests, malaria parasite, retroviral screening (RVS), hepatitis B surface antigen and hepatitis C virus screening as well as CD4 count and chest X-ray was also done.

The physicians and haematologists were invited to review and co-manage the patient.

The chest X-ray showed changes HIV positive women were in keeping with pulmonary tuberculosis (PTB). The RVS was positive and an initial diagnosis of PTB in an immunocompromised patient was made.

She later had a right pleural effusion and was assessed to have septicaemia and immunosuppression.

She was treated with antimalarials, antibiotics, haematinics and had rifampicin 10 mg, isoniazid 7.5 mg, ethambutol 25 mg and pyrazinamide 35 mg, all given per kilogram body weight and per oral for tuberculosis. She had these for 18 days before discharge and continued at home but stopped 2 weeks before readmission for elective C/S on the 6<sup>th</sup> May 2009.

On admission (1<sup>st</sup> January 2009) at a gestational age of 21 weeks, her PCV was 17%. She declined blood transfusion as a Jehovah's Witness and buttressed this with her durable power of attorney.

An alternative to blood transfusion in the form of parenteral iron in combination with erythropoietin was given. She was to receive iron sorbitol (Jectofer), but she could not procure it and had to commence erythropoietin at a dose of 2000 IU twice a week subcutaneous. She received 3 doses of erythropoietin on the 6<sup>th</sup>, 9<sup>th</sup> and 14<sup>th</sup> February 2009.

She had iron dextran (Imferon) (total dose – 1725 mg) in 1 L of normal saline on the 27<sup>th</sup> February 2009 and her clinical condition improved thereafter.

She insisted on being discharged and was discharged home on the 12<sup>th</sup> March 2009 without doing her post-Imferon PCV and other tests. She was being seen in the antenatal clinic but was readmitted on the 6<sup>th</sup> May 2009 for elective C/S at 40 weeks gestation for PMTCT and was asked to provide four units of Haemaccel.

She was reviewed and was to be considered for a vaginal delivery if the urgent PCV was less than 26%. The urgent

PCV was 22% (6/5/09). This PCV was too low for C/S and anti-retroviral therapy, especially zidovudine.

Another PCV done on 11/5/09 increased to 24%. She was commenced on ART, while she had 1 L of Haemaccel.

She went into labour on 13<sup>th</sup> May 2009 at 41 weeks gestation. The labour was augmented with oxytocin, precautions for PMTCT were taken, and she had a spontaneous vaginal delivery with a live female baby with Apgar scores 6 at one minute and 8 at five minutes on 14<sup>th</sup> May 2009. She was discharged home on 15<sup>th</sup> May 2009 on double dose haematinics and anti-retroviral therapy. She kept her appointment at 6 weeks and had a normal puerperium.

## DISCUSSION

Anaemia in pregnancy as defined by the World Health Organization is maternal haemoglobin (Hb) less than 11g/dl (haematocrit or [PCV] <33%),<sup>4</sup> but Nigerian based studies define Hb concentration <10 g/dl (PCV <30%) as diagnostic for anaemia in pregnancy.<sup>5</sup>

Severe anaemia is defined as Hb <7 g/dl or PCV <21%.<sup>4</sup> Anaemia is caused by several factors including poverty, poor nutrition, malaria, infections as HIV and poor family planning.

Both cases had severe anaemia requiring blood transfusion, but they declined for religious reasons, being Jehovah's Witnesses and had to be managed with alternatives to blood transfusion.<sup>1,3</sup> The principal group of women known to decline blood and blood products are the Jehovah's Witnesses.<sup>1</sup>

Jehovah's Witnesses are members of a religious group which started as a small Bible study group in 1869 in Pennsylvania in the United States of America. In 1931, they began calling themselves Jehovah's Witnesses.<sup>2</sup> In the 1940s, Jehovah's Witnesses recommended blood transfusion refusal by her members based on citations from teachings in the Old Testament of the Bible.<sup>2</sup> They preach that eating blood is connected to blood transfusion because 'receiving glucose solution transvenously is called transvenous nutrition'.<sup>2</sup> This refers to the feeding of patients through an intravenous drip. Therefore, blood transfusion is the same as eating blood from the vein.<sup>2</sup> Thereafter, Jehovah's Witnesses refused blood transfusion in medical care.

Early registration of pregnant women in their first trimester is advantageous for early detection of complications for

prompt intervention and monitoring as shown in the first case report. This has also been documented by others.<sup>6</sup>

Oral therapy for anaemia is preferable,<sup>1,7</sup> if the pregnant woman can register early enough, preferably in the first trimester. It takes about 6 months to replenish iron stores for iron deficiency anaemia.<sup>7</sup>

She was able to correct her anaemia with proper counselling on her diet and oral haematinics with no adverse effects, and without going against her religious belief.

In the second case, she was admitted as an emergency and the odds against her were: she was in her second trimester, she had malaria in pregnancy, she had HIV for 2 years without ART, PTB and septicaemia and obviously needed blood transfusion, but she declined and produced a legal document against it. It is the right of every patient to refuse any specific form of treatment including transfusion of blood and blood components. It is the duty of the physician to accept the decision and give the patient the best available alternative.<sup>1,8</sup>

The choice here is parenteral haematinics, which replenishes the iron stores faster than the oral ones<sup>7,9</sup> and in combination with erythropoietin to stimulate erythropoiesis.

Erythropoietin is acceptable to Jehovah's Witnesses<sup>10</sup> and is indicated in anaemia in pregnancy, HIV, anaemia of chronic disease and perioperatively. She had erythropoietin for 2 weeks and was able to raise her PCV by 3% from 16% to 19%. The rate of response is dose dependent and varies among patients.<sup>11,12</sup>

She came back at term still anaemic but was able to cope with the compensatory mechanisms of chronic anaemia. With proper management of labour to minimise blood loss by the obstetric team, she had her baby. There was good fetomaternal outcome.

## CONCLUSION

It is important that there is a good team management and cooperation between the patient and the teams, the nutritionists or dieticians, the obstetrician, haematologists, the anaesthetists to work together and get a good outcome. The pregnant patient needs to register early and be monitored properly and be managed without blood for those who do not want a blood transfusion.

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### Conflicts of interest

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