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Case Report

Autoimmune Hemolytic Anaemia in Pregnancy: A Report of Two Cases

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Abstract

Background

Autoimmune hemolytic anaemia in pregnancy is rare and not well described in literature. The diagnosis of AIHA is made in presence of hemolysis, positive direct antiglobulin test (DAT) and anaemia. The most common type is warm autoimmune hemolytic anaemia (80%) followed by cold type (20%) and very rare the mixed type.

Case reports

We present first case of 'cold type AIHA' with episode of acute hemolysis at 27weeks gestation. She was managed with multidisciplinary team input and required more than 14 units RCC transfusion. The second case is 'mixed type of AIHA, one of the rarest form of AIHA. She had uncomplicated antenatal and postnatal period with no hemolytic episodes and no blood transfusion required. Both cases were managed by high risk obstetric team in collaboration with haemotology and endocrinology teams.

Conclusion

AIHA in pregnancy is rare and needs MDT management. Early and thorough investigation of anaemia with exclusion of other common causes of hemolysis is crucial for early detection and management.

Keywords

Autoimmune hemolytic anaemia (AIHA), Lactate dehydrogenase(LDH), Hemolysis, Blood transfusion, Haemoglobin(Hb), Direct antiglobulin test(DAT), Mutidisciplinary team(MDT), Red cell concentrate (RCC), Hb (haemoglobin), LMWH (low molecular weight heparin).

Introduction

Anaemia in pregnancy is estimated to affect 40% of women worldwide. Anaemia in pregnancy is caused by numerous factors, and two most common causes is iron deficiency and acute blood loss. Autoimmune haemolytic anaemia in pregnancy is very rare and very little information is there in literature till date. AIHA can be autoimmune, alloimmune or drug induced based on the antigenic stimulus responsible for immune response. The disease is also classified as warm (wAIHA,48-70% of cases) and cold forms (cAIHA,15-25% of cases) based on the optimal temperature of activity of IgG or IgM autoantibodies. The remaining cases are mixed disorders [1,2,3]. AIHA can be secondary to systemic autoimmune diseases and lymphoproliferative syndromes like Chronic lymphocytic leukemia [4,5,6,7,]. The presentation of AIHA can be acute and transient, or chronic with multiple relapses. Here we present two rare cases of AIHA in pregnancy.

Case Report 1

We report a case of 32-year-old gravida 3 para 0 who had her booking of pregnancy at 13weeks gestation and all her booking bloods were normal. At 27 weeks gestation she presented to the emergency department with complains of general unwell, easy fatigue and weakness. Later on investigation her haemoglobin was 5.9g/dl with increase reticulocyte count and increase LDH with hemolysis. Direct Antiglobulin test was strong for IgM autoantibodies, which suggests cold AIHA. She had 8 units Red cell concentrate transfusion and was managed in high dependency unit. She was kept warm and well hydrated and steroids were started for her. MDT care under haematology and high-risk obstetrics clinics with consultant led care was maintained throughout pregnancy.

Patient was commenced on high dose folic acid 5 mg, thromboprophylaxis with LMWH and advised to keep warm. She was managed in collaboration with haematology team with aim to maintain her Haemoglobin >8g/dl. She had 14 units red cell concentrate transfusions throughout the pregnancy. Frequent fetal monitoring with MCA-PSV Doppler and fetal growth were assessed at every 2 weeks interval. Macrosomia secondary to gestational diabetes on insulin was detected. Hematology team was contacted prior to delivery and 3 units RBCS were cross matched in case of heavy bleeding. Elective caesarean section was carried out at 36 wks with no complications and baby had normal apgar scores. She was discharged on day 4 post op with her Hb maintained at 10.2g/dl.

Case Report 2

We report a second case of cold and warm, mixed type AIHA in pregnancy. A 35-year para1 woman with BMI 20, had her booking visit at 13 weeks. She had her first pregnancy with no antenatal and postnatal complications. She delivered having an emergency caesarean section due to failure of labour. She had a history of asthma and migraine. Her booking haemoglobin level was 9.7 g/dl. At 27 weeks gestation on her routine bloods, haematology team reported haemolysis in patient blood results. Hb was 7.8 g/dl at that stage and she was asymptomatic. Ultrasound showed macrosomia and doppler study was normal. She had a positive oral glucose tolerance test. HbA1c wasn't sent due to haemolysis. Patient had combined care under diabetic team and was managed on diet and exercise. Haematology team reviewed patient same week and confirmed mixed type AIHA (both equally strong in DAT for cold and warm antibodies).

The team advised caution with steroids use especially with gestational diabetes knowing that steroids were only effective treatment. Plan was to hold off steroids with Hb more than 8 g/dl. Patient was advised to keep warm and was on folic acid 5 mg and prophylactic LMWH. Maternal and fetal risks of AIHA were explained to patient. Serial growth scans and dopplers were recommended due to risk of IgG antibody crossing the placenta and causing fetal haemolysis. MDT included haematology, endocrine and obstetric team with fortnightly visits. At 34wks, diabetic team commenced patient on insulin due to uncontrolled blood sugar levels and Hb was 9.5g/dl at that stage.

The patient was reviewed in the clinic a week later at 35 wks gestation and in view of uncontrolled blood sugars she had diabetic team review. Patient spiked temperature (38.3*C) with sore throat at 36 weeks gestation. She was managed on intravenous antibiotics, kept warm and well hydrated with MDT care. She was tested Covid positive, had Hb-9.1 g/dl, WBCs 16.4, LDH-408U/L and C reactive protein 55IU. Elective repeat Caesarean section was planned as mode of delivery on maternal request. Birth weight was 3455gm and baby was admitted to NICU for evaluation for covid. Maternal Hb was 8.9 g/dl prior to discharge at day four caesarean section. Patient didn't need blood transfusion throughout pregnancy and delivery. Both mother and baby were discharged together. Follow up appointment in postnatal with blood sugar check at 6 weeks and haematology clinics were scheduled.

Discussion

AIHA in pregnancy is rarely described in literature and incidence unknown. According to sources 1 in 50000 pregnancies can develop anti RBCs with various phenotypic expression [9,10,11,12,13,14,15,16,17,18]. Various differential diagnosis of anemia in pregnancy are physiological haemodilution, nutritional deficiencies, haemoglobinopathies, Pre eclampsia and microangiopathies. AIHA is due to lysis of own RBCs causing moderate to severe anaemia. Hemolysis in pregnancy can be seen in HELLP syndrome, acute fatty liver of pregnancy, hemolytic uraemic syndrome, and TTP, or as a result of medication. Detection of AIHA is suspected in presence of anaemia, hemolysis and positive direct antiglobulin test (DAT) with mono specific antisera. Rarely DAT negative cases are diagnosed after exclusion of other hemolytic anaemias. AIHA in pregnancy require complete anaemia work up with blood pressure measurement, evaluation of liver function test, urine examination and peripheral smear. Most of the cases of AIHA in pregnancy have good prognosis and resolve after delivery. In case of warm type AIHA, IgG antibodies can cross placental barrier. Usually, AIHA in pregnancy are late in pregnancy and steroids responsive and very rarely IV Immunoglobulin are required. The presence of silent RBC's antibodies is not always associated hemolysis. In case series of 60 cases of silent AIHA, 5 cases were in pregnant women with no effect on pregnancy or neonatal health [19]. According to a study by Hoppe et al, autoimmunization against self RBCs increases in pregnancy [20]. According to Wikman et al cytokine such as interleukin-8 activation in pregnancy is associated with autoantibodies formation [21]. IgG antibody through transplacental transfer can lead to fetal hemolytic anemia.

Conclusion

AIHA in pregnancy is uncommon condition and the cause for antibody production is associated with unexplained immunological mechanism involved. There are few cases described in literature but unfortunately no proper data is available in terms of its management. MDT team management is crucial to prevent maternal and fetal morbidity in these cases of AIHA.

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