**Author's response to reviews**

**Title:** Severe hydrops in Rh(D) positive mother due to antenatally diagnosed anti c antibodies: a case report

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**Author's response to reviews:** see over
To
The Editor
Journal of Medical Case Reports

Dear Sir

Please find attached revised manuscript and the responses to the reviewers marked in red.

Regards

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Reviewer 1

Reviewer: Mala Varma

Comments to authors:
This paper alerts the Indian population about the importance of screening women with adverse pregnancy outcomes and fetal hydrops for anti-c antibodies. This first case report from India of detection of anti-c antibodies in a pregnant woman allowed for the appropriate management of her fetal hydrops with c negative blood. This paper will help to expand current red cell antibody screening practices in pregnant women in India.
There were no additions to the manuscript suggested by Reviewer 1

Quality of written English: Needs some language corrections before being published
As suggested, appropriate language corrections have been made in manuscript and highlighted in red.
Reviewer 2

Reviewer: fouad Boctor

Comments to authors:
The author describes a case of newborn hemolytic transfusion reaction due to presence of maternal anti-c antibodies. There are several deficiencies in the MS.

1. The mother is typed O Rh (D) positive and the newborn type A Rh (D) positive. The authors did not exclude the possibility that the observed reaction may be due to maternal anti A IgG which could cross the placenta and cause the hemolytic transfusion reaction. ABO incompatibility may cause severe reaction, including a rare hemolysis which may be severe enough to cause hydrops (Gilja BK, Shati VP. Hydrops fetalis due to ABO incompatibility. Clin. Pediatric 1988; 27:210-212).

2. Despite the fact that antibody titers did not prove to have a good prognostic value titer of 4 for anti-c is low to cause, this severe reaction. The dilution titer was confirmed twice with the blood bank. The dilution titers of the antibodies vary from various institutions. There is no international standard for dilution titers for the rare blood group antibodies. The titer may not necessarily correlate with the severity of the clinical outcome.

3. The author mistakenly uses the term titer of 1:4, 1:16. These values are not titers. They are dilutions. Titers are 4, 16.

Word “titer” has been replaced by “dilutions” at appropriate places.
4. The authors mentioned the mother haplotype as R1R1 (CDe / CDe) and baby is cDe / cDe. This is wrong; the baby must have CDe haplotype. The babies haplotype would be cDe/cDe, as has been already discussed in the manuscript. Presence of c antigen is mandatory on fetal/neonatal cell to cause hemolysis due to anti-c antibodies (which have been established in maternal serum in the present report). Fetal haplotype can not be CDe as suggested by reviewer, as it would not lead to formation of anti-c antibodies, and cause hemolysis.

5. In the text the authors referred that Kell, Duffy, Kidd antigens are a minor blood group system. On what basis they call them minor? These are common antigens on red cells and could cause hemolytic transfusion reaction. As suggested, “minor” word has been deleted from the manuscript.

6. Anti-c can cause hemolytic transfusion reaction for the fetus and newborn. This has been reported previously from other countries include India (Babinszki A, Berkowitz RL. Hemolytic disease of newborn caused by anti-c, anti-E and anti-Fya: Report of five cases. Prenat. Diagn. 1999; 19:533-6. Thakral B, Agrawal SK, Dhawan HK, Saluja K, Dutla S, Marwaha, N. First report from India of hemolytic disease of newborn by anti-c and anti-E in Rh (D) positive mothers. Hematology, 2007; 12:377-80.) Anti-c antibodies causing hemolytic transfusion reaction for fetus/newborn have been reported in literature. However, this is the first Indian report of antenatally diagnosed anti-c antibodies resulting in fetal hydrops which was of severe variety, requiring multiple in-utero and ex-utero transfusions. The previous report mentioned by the reviewer was of retrospective nature.

7. Minor point the authors never explained why the mother had esophageal varices, hematemesis and melena for the past 10 years. Is it possible she may have auto immune hepatitis causing liver cirrhosis which may contribute to the present condition? Maternal auto-immune work up (Viral hepatitis, Anti nuclear antibodies, Anti dsDNA antibodies, Anti smooth muscle antibody, and Anti LKM antibodies) done by the gastroenterology colleagues was normal. She was a known case of extrahepatic portal vein obstruction.