Revista Brasileira de Hematologia e Hemoterapia
Brazilian Journal of Hematology and Hemotherapy
www.rbhh.org

Scientific comment

Pregnancy in sickle cell disease – do we know what to expect?☆

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Pregnancy in patients with sickle cell disease (SCD) has always been a challenge for both hematologists and obstetricians. Although increasing knowledge on the complex pathophysiology of the sickle vaso-occlusive process has enabled better characterization of the endothelial dysfunction in SCD and how different genotypes present with varying degrees of severity, physicians can still not be sure of the outcome of a pregnancy in a given patient based solely on the baseline assessment outside of the pregnancy setting – obstetricians have frequently been surprised by how severely ill pregnant patients with SCD can get, even though they had never had life-threatening complications previously.

SCD predisposes pregnant women to a large number of complications, such as a higher incidence of eclampsia, preterm labor and delivery, deep venous thrombosis, intrauterine growth restriction, urinary tract infections, sepsis, etc.[1] While it is understandable that widespread sickle vasculopathy can contribute to poor pregnancy outcomes, scientific literature on both the pathophysiology of these complications in SCD pregnancies and evidence-based recommendations for the proper management of these patients are still lacking.

A clear example is the concept that hydroxyurea (HU) should not be used in pregnant women, and that its use should be interrupted once pregnancy is confirmed.[2] This is easily accepted by physicians, but evidence for such recommendations is largely based on animal studies using very high doses of HU, and a careful review of the literature so far has failed to prove increased risk of birth defects in pregnant women taking HU.[3] Without HU as a therapeutic option, management of pregnant patients with SCD is limited to blood transfusion. Reports have been mostly limited to case series, with only a few published prospective studies addressing transfusion strategies.[4,5] In this regard, there is neither consensus on how to decide which patients should be transfused nor are there studies that investigate how and at what time point during the pregnancy this would be ideal. Gilli et al. have previously reported favorable outcomes in SCD patients that were systematically subjected to erythrocytapheresis by 28 weeks of gestation.[6] Similarly, the article by Silva-Pinto et al. in this issue of the Revista Brasileira de Hematologia e Hemoterapia (RBHH) joins the voices of several other publications that present data associating transfusion with better fetal and maternal outcomes.[7] Statistical significance is hard to come by because pregnancy in SCD is still a relatively rare event in a single institution. While only one randomized, prospective trial showed no benefit in reducing pregnancy-related complications or fetal growth impairment with prophylactic transfusions, there was a significant reduction in the incidence of vaso-occlusive crises.

With the current effort toward better quality of life for SCD patients, and the perspective of new therapies to increase life expectancy in this population, there is need for multicentric collaboration to obtain better evidence on how to manage this special population of pregnant women. Since teratogenicity of fetal hemoglobin inducers will most probably preclude the design of clinical trials involving pregnant women, prospective studies should focus on transfusional management of these patients, evaluating both obstetric and hematologic outcomes. Until then, physicians will still not know what to expect when their patients are expecting.

DOI of original article: http://dx.doi.org/10.1016/j.bjhh.2014.07.002.

☆ See paper by Silva-Pinto AC et al. on pages 329–33.

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http://dx.doi.org/10.1016/j.bjhh.2014.07.017

Conflicts of interest

The author declares no conflicts of interest.

REFERENCES

1. Villers MS, Jamison MG, De Castro LM, James AH. Morbidity associated with sickle cell disease in pregnancy. Am J Obstet Gynecol. 2008;199(2):125.e1–5.
2. Brawley OW, Cornelius LJ, Edwards LR, Gamble VN, Green BL, Inturrisi C, et al. National Institutes of Health Consensus Development Conference statement: hydroxyurea treatment for sickle cell disease. Ann Intern Med. 2008;148(12):932–8.
3. Diav-Citrin O, Hunnisett L, Sher GD, Koren G. Hydroxyurea use during pregnancy: a case report in sickle cell disease and review of the literature. Am J Hematol. 1999;60(2): 148–50.
4. Ngô C, Kayem G, Habibi A, Benachi A, Goffinet F, Galactéros F, et al. Pregnancy in sickle cell disease: maternal and fetal outcomes in a population receiving prophylactic partial exchange transfusions. Eur J Obstet Gynecol Reprod Biol. 2010;152(2):138–42.
5. Koshy M, Burd L, Wallace D, Moawad A, Baron J. Prophylactic red-cell transfusions in pregnant patients with sickle cell disease. A randomized cooperative study. N Engl J Med. 1988;319(22):1447–55.
6. Gilli SC, De Paula EV, Biscaro FP, Marques JF, Costa FF, Saad ST. Third-trimester erythrocytapheresis in pregnant patients with sickle cell disease. Int J Gynaecol Obstet. 2007;96(1):8–11.
7. Silva-Pinto AC, Ladeira SO, Brunetta DM, de Santis GC, Angulo IL, Covas DT. Sickle cell disease and pregnancy: analysis of 34 patients followed at the Regional Blood Center of Ribeirão Preto, Brazil. Rev Bras Hematol Hemoter. 2014;36(5):329–33.