Information about the contributions of each person named as having participated in the study

1) Guarantor(s), i.e., person(s) who is (are) responsible for the integrity of the work as a whole:
   • Mehdi Nouraie, Center for Sickle cell Disease, snouraie@howard.edu

According to the International Committee of Medical Journal Editors (ICMJE)
(http://www.icmje.org/ethical_1author.html): “Authorship credit should be based on: 1) substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; 2) drafting the article or revising it critically for important intellectual content; and 3) final approval of the version to be published. Authors should meet conditions 1, 2, and 3 ......................... Acquisition of funding, collection of data, or general supervision of the research group alone does not constitute authorship”.

The guarantors of this manuscript confirm that all persons designated as authors qualify for authorship, and that each author has participated sufficiently in the work to take public responsibility for appropriate portions of the content.

2) Authors who participated in the conception of the study: Mehdi Nouraie, Kevin Cheng, Xiaomei Niu, Victor R. Gordeuk

3) Design & Methods. The following authors were responsible for specific investigations:
   • Mehdi Nouraie, Kevin Cheng, Xiaomei Niu, Catherine P. Miniti, Craig Sable, Sohail Rana, Andrew Campbell, Gregory Ensing, Gregory J. Kato, Mark T. Gladwin, Oswaldo L Castro and Victor R. Gordeuk were responsible for designing the study.
   • Evadne Moore-King, Margaret F. Fadojutimi-Akinsi, and Niti Dham were responsible for clinical data collection and methods.
   • Kevin Cheng and Xiaomei Niu were also responsible for Lab. data collection.

4) Results. The following authors were responsible for specific portions of the results, including figures and tables:
   • Mehdi Nouraie, Kevin Cheng and Victor R. Gordeuk were responsible for all tables and figures.

5) Writing the manuscript. The following authors were responsible for writing the manuscript:
   • All authors were responsible for writing and approving the final manuscript.

6) Contributors Listed in Acknowledgments: None.