STUDY UPDATES #1

Howard J, Ataga KI, Brown RC, et al. Voxelotor in adolescents and adults with sickle cell disease (HOPE): long-term follow-up results of an international, randomised, double-blind, placebo-controlled, phase 3 trial. *Lancet Haematol.* 2021;8(5):e323.

- 72-week follow-up of the HOPE trial showed durable improvements in the hemoglobin level
- Adjusted mean change in hemoglobin level from baseline to week 72
  - Voxelotor 900 mg/day : 0.5 g/dL
  - Voxelotor 1500 mg/day: 1.0 g/dL
  - Placebo: 0.0 g/dL
- Percent of subjects who achieved >3 g/dL change in hemoglobin level from baseline to week 72
  - Voxelotor 900 mg/daya: 9.8%
  - Voxelotor 1500 mg/day: 20.0%
  - Placebo: 0%
- Annualized rate of anemia episodes
  - Voxelotor 900 mg/daya: 0.04 episodes/year
  - Voxelotor 1500 mg/day: 0.05 episodes/year
  - Placebo: 0.15 episodes/year

Shah P, Suriany S, Kato R, et al. Tricuspid regurgitant jet velocity and myocardial tissue Doppler parameters predict mortality in a cohort of patients with sickle cell disease spanning from pediatric to adult age groups – revisiting this controversial concept after 16 years of additional evidence. *Am J Hematol.* 2021;96(1):31-39.

- 9-year follow-up showed that tricuspid regurgitant jet velocity and systolic and diastolic function are strong markers of cardiovascular disease severity and predict mortality in patients of all ages with sickle cell disease
- Nontransfused and chronically transfused patients with sickle cell anemia and with/without cardiovascular disease were recruited
- After median follow-up of 7.7 years, the mortality rate was 19% (median age 35 years)
- 0.1 m/second increase in tricuspid regurgitant jet velocity increased mortality risk 3%
- 1 cm/second increase in systolic tissue velocity increased mortality 91%
- 1 cm/second decrease in diastolic tissue velocity increased mortality 43%

Yu J, Black V, Lamba J, Horn B. Potential risk factors associated with graft failure of haploidentical hematopoietic stem cell transplantation in children with sickle cell disease. *J Pediatr Hematol Oncol.* 2021;43(4):e583-e586.

- Report of 3 cases of nonmyeloablative haploidentical hematopoietic stem cell transplant graft failure in 3 children with sickle cell disease
- Factors contributing to graft failure
  - Overadjusted chemotherapy dosage using formulas based on ideal body weight
  - Increased drug clearance because of age and use of steroids as premedication for antithymocyte globulin
  - Low donor cell availability
  - Frequent viral reactivations
  - Antihuman leukocyte antigen donor-specific antibodies
- Conclusions
  - Optimize nonmyeloablative regimens
  - Perform haploidentical transplants for sickle cell disease on clinical trials

OTHER PUBLICATIONS

Chalacheva P, Ji Y, Rosen CL, DeBaun MR, Khoo MCK, Coates TD. Nocturnal peripheral vasoconstriction predicts the frequency of severe acute pain episodes in children with sickle cell disease. *Am J Hematol.* 2021;96(1):60-68.

Glaros AK, Razvi R, Shah N, Zaidi AU. Voxelotor: alteration of sickle cell disease pathophysiology by a first-in-class polymerization inhibitor. *Ther Adv Hematol.* 2021;12:20406207211001136.

Karki NR, Kutlar A. P-selectin blockade in the treatment of painful vaso-occlusive crises in sickle cell disease: A spotlight on crizanlizumab. *J Pain Res.* 2021;14:849-856.

Piel FB, Jobanputra M, Gallagher M, Weber J, Laird SG, McGahan M. Co-morbidities and mortality in patients with sickle cell disease in England: A 10-year cohort analysis using hospital episodes statistics (HES) data. *Blood Cells Mol Dis.* 2021;89:102567.

Shafrin J, Thom HHZ, Keeney E, et al. The impact of vaso-occlusive crises and disease severity on quality of life and productivity among patients with sickle cell disease in the US. *Curr Med Res Opin.* 2021;doi:10.1080/03007995.2021.1897556.

Singh A, Brandow AM, Panepinto JA. COVID-19 in individuals with sickle cell disease/trait compared with other Black individuals. *Blood Adv.* 2021;5(7):1915-1921.

Welch-Coltrane JL, Wachnik AA, Adams MCB, et al. Implementation of individualized care plans decreases length of stay and hospital admission rate for high utilizing adults with sickle cell disease. *Pain Med.* 2021;doi:10.1093/pm/pnab092.