Successful Use of Hemopure™ in a Patient with Life-Threatening Anemia Who Was Unable to Receive Blood

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Introduction

Few disagreements over therapy have drawn as much attention as refusal of blood transfusion. One well-known reason involves Jehovah’s Witness (JW) patients. Practicing JW will not accept transfusion of whole blood or the "four major fractions.”

Case Description

A previously healthy middle-aged JW man presented with recurrent ear infections. He returned with respiratory symptoms and was diagnosed with community-acquired pneumonia that seemed refractory to antibiotics. The patient later presented to the emergency department, reporting hemoptysis, hematuria, arthralgia, fevers, night sweats, and weight loss. As he declined transfusion, he received erythropoietin and iron. Imaging revealed multifocal cavitary lung lesions that were negative on culture. With ongoing hemoptysis, the patient was told he would likely die without a blood transfusion.

The patient was placed on a ventilator and transported to a tertiary care facility. He arrived with a critical hemoglobin (Hgb) of 4.7g/dL (hematocrit 14%), creatinine 0.82mg/dL, lactate 1.1mmol/L, and ALT 40units/L. The patient was suffering from acute hypoxemic respiratory failure, severe anemia, and hypotensive shock secondary to diffuse alveolar hemorrhage. He received a diagnosis of granulomatositis with polyangiitis (GPA) and was given high-dose steroids.

His wife consented to participation in an expanded access (compassionate use) study of HBOC-201 purified bovine Hgb solution (Hemopure™). Two units were transfused. Hgb increased from 4.7 to 5.8 g/dL and severe anemia symptoms stabilized. Daily ascorbic acid was administered to prevent oxidation of Hgb to met-Hgb. Met-Hgb increased from 0.7 to 2.5%. Within 8 days, the Hgb rose to >7g/dL (hematocrit >21%) and he was discharged home.

Discussion

Hemopure has been tested in over 20 clinical trials; however, the FDA has concluded it is NOT interchangeable with RBCs. In this special case, the authors believe Hemopure was an appropriate option when no alternative was available. The Risk-Benefit Ratio was not a question of comparing Hemopure with donor RBC, but Hemopure with the absence of alternative treatment.