"To evaluate the immediate effects of red blood cell transfusion on central venous oxygen saturation and lactate levels in septic shock patients with different transfusion triggers" Mazza et al (2015).

Reference:

Mazza, B.F., Freitas, F.G., Barros, M.M., Azevedo, L.C. and Machado, F.R. (2015) Blood transfusions in septic shock: is 7.0g/dL really the appropriate threshold? Revista Brasileira de Terapia Intensiva. 27(1), p.36-43.

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Abstract:

OBJECTIVE: To evaluate the immediate effects of red blood cell transfusion on central venous oxygen saturation and lactate levels in septic shock patients with different transfusion triggers.

METHODS: We included patients with a diagnosis of septic shock within the last 48 hours and hemoglobin levels below 9.0g/dL Patients were randomized for immediate transfusion with hemoglobin concentrations maintained above 9.0g/dL (Group Hb9) or to withhold transfusion unless hemoglobin felt bellow 7.0g/dL (Group Hb7). Hemoglobin, lactate, central venous

oxygen saturation levels were determined before and one hour after each transfusion.

RESULTS: We included 46 patients and 74 transfusions. Patients in Group Hb7 had a significant reduction in median lactate from 2.44 (2.00 – 3.22) mMol/L to 2.21 (1.80 – 2.79) mMol/L, p = 0.005, which was not observed in Group Hb9 [1.90 (1.80 – 2.65) mMol/L to 2.00 (1.70 – 2.41) mMol/L, p = 0.23]. Central venous oxygen saturation levels increased in Group Hb7 [68.0 (64.0 – 72.0)% to 72.0 (69.0 – 75.0)%, p < 0.0001] but not in Group Hb9 [72.0 (69.0 – 74.0)% to 72.0 (71.0 – 73.0)%, p = 0.98]. Patients with elevated lactate or central venous oxygen saturation < 70% at baseline had a significant increase in these variables, regardless of baseline hemoglobin levels. Patients with normal values did not show a decrease in either group.

CONCLUSION: Red blood cell transfusion increased central venous oxygen saturation and decreased lactate levels in patients with hypoperfusion regardless of their baseline hemoglobin levels. Transfusion did not appear to impair these variables in patients without hypoperfusion. ClinicalTrials.gov NCT01611753.

Full Text

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