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TRANSFUSION THRESHOLD VARIANCE BETWEEN CANNULATION TYPE AND DISEASE TYPE IN EXTRACORPOREAL MEMBRANE OXYGENATED PATIENTS

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Extracorporeal Membrane Oxygenation (ECMO) is an increasingly used form of life support, which has also been associated with higher volumes of blood product transfusions. Many studies have shown that greater transfusion volumes are associated with an increased risk for mortality, which causes concern for patients cannulated on ECMO. This study set out to determine which patients would be most affected by this, differentiating patients by cannulation type and disease type. The primary hypothesis was that the thresholds at which patients were transfused would differ between venoarterial and venovenous cannulation, and between cyanotic heart disease, non-cyanotic heart disease, and non-cardiac disease. It was also hypothesized that patient mortality would be associated with higher volumes of blood product transfusion.

In this retrospective study, data was extracted from the PCCM ECMO database. Patient data was analyzed both by each transfusion threshold and by patient mean transfusion threshold. Difference in median transfusion thresholds was determined using a Mann Whitney Test and a Kruskal Wallis Test. The risk of mortality associated with transfusion volume was determined using a logistic regression.

The results of the data suggest that transfusion thresholds vary between blood product type as well as disease and cannulation type, with red blood cell and platelet thresholds varying significantly between cannulation type, and plasma transfusion thresholds varying significantly between disease type. Higher volumes of red blood cell and plasma transfusions are also correlated with higher risk for mortality in these patients.