COMPARATIVE ANALYSIS OF BLOODLESS MEDICINE AND TRANSFUSION COHORTS

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Introduction: Anemia patients often received allogenic blood transfussions as standard practice at a threshold hemoglobin of 7.0g/dL despite significant association between transfussions and increased morbidity and mortality. Bloodless medicine and surgery programs offer valuable treatment options to anemic patients who decline blood transfusion. St. Peter's University Hospital has been providing a bloodless medicine program for patients who do not wish to receive blood transfusions during their admissions. This study aims to compare patients who have participated in the bloodless medicine program to those who received blood transfusions during their hospitalization.

Methods: This study was a single centre, retrospective cohort study of adult patients admitted to an acute care teaching hospital between 2016 – 2020. Patients were included if they had a hemoglobin of less than 7.0g/dL and received a blood transfusion (BT) or were enrolled in the bloodless medicine program (BM) and received appropriate interventions according to the protocol. Univariate analysis were run with JMP Pro.

Results: 45 patients who had a hemoglobin less than 7.0g/dL at the time of enrollment were included in the analysis (BM group). A total of 101 patients with a hemoglobin less than 7.0g/dL and received at least one unit of packed red blood cells were included in the transfusion group (BT group). The baseline characteristics of the overall population are listed in Table 1. On average, the BT patients were older (64.5 years vs 56.6 years, p=0.03), and had a higher median CCI (4 vs. 2, p=0.02). Race was significantly different between the two groups. There were no significant differnces in other patient demographics and characteristics. Patients in the BM group also had significantly low mean baseline hemoglobin (8.5 vs 7.5, p=0.014). Moreover, patients in the BM group also had significantly lower nadir hemoglobin level throughout a patient's hospitalization (8.6 vs 5.7, p=0.05), there were no differences in hospital mortality and 30-day admission rate.

Conclusion: Enrolment in the bloodless medicine programe did not result in worse outcomes compared to blood transfusions for patients who had severe anemia during their hospitalization. As evidenced by numerous clinical trials and this study, blood transfusions are related with morbidity and mortality. As a result, more institutions should offer bloodless medicine programs for patients who wish not to get transfusions for various reasons. This warrants a further investigation with bigger sample size to validate its safety and efficacy.

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