**Background/Case Studies:**

In comprehensive patient blood management (PBM) programs, common metrics to promote desirable transfusion practice include single‐unit RBC and platelet transfusions. In the course of a concurrent blood utilization audit, as part of an institutional PBM program at an academic, tertiary care hospital, a surprising number of single‐unit plasma transfusions were identified. These transfusion events are the basis for the current study.

**Study Design/Methods:**

Retrospective plasma transfusion data for 2017, and four months of concurrent data from 2019, were obtained by interrogating the electronic health record system. Single‐unit plasma transfusions were identified. A proximate pre‐transfusion INR value served as the basis for dividing the study population into two groups: patients with INR values ≤1.5 and patients with INR values >1.5. The subgroup of patients with INR values >1.5 was the primary focus of this study. Additional study data for this group included the transfusing clinical service, a post‐transfusion INR value obtained within 24 hours of transfusion, a history of bleeding, and a history of concurrent warfarin administration. Only adult patients were included. Patients transfused in either the operating room or the post‐anesthesia care unit were excluded. No distinction was made between the type of plasma product transfused (i.e. FFP versus PF24).

**Results/Findings:**

A total of 3,365 units of plasma were transfused, of which 460 (14%) were single units (88 with INR values ≤1.5 and 372 with INR values >1.5). Of the patients with INR values >1.5, complete study data was available for 227 patients who were further stratified into INR quartiles (>1.5-2.0, 2.1-3.0, 3.1-4.0, >4.1). Mean pre- and post-transfusion INR values, mean change in INR, and percentage of patients bleeding at the time of transfusion were calculated (See Table). Patients in the first quartile were most commonly transfused for bleeding, whereas patients with the highest INR values more commonly received prophylactic transfusions. Plasma transfusion for warfarin reversal was rare (8/227; 4%). The INR change with a 1-unit plasma transfusion was most evident in patients with more significantly prolonged INR values. Eighty percent of all units were transfused by critical care medicine, internal medicine, gastroenterology, and emergency medicine.

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| Single-Unit Plasma Transfusions in Patients with INR > 1.5 |
| INR Quartile | Single-unit Transfusions | Mean Pre-INR | Mean Post-INR | p-value\* | Mean ∆ in INR | % Bleeding |
| >1.5-2.0 | 110 | 1.79 +/- 0.14 | 1.69 +/- 0.26 | < 0.0001 | 0.10 | 60 |
| 2.1-3.0 | 83 | 2.40 +/- 0.27 | 2.09 +/- 0.37 | < 0.0001 | 0.31 | 42 |
| 3.1-4.0 | 20 | 3.37 +/- 0.29 | 3.20 +/- 1.61 | 0.0004 | 0.17 | 22 |
| >4.1 | 14 | 6.14 +/- 1.57 | 4.24 +/- 1.8 | < 0.0001 | 1.90 | 22 |

**\***Comparison of individual pre- and post-transfusion INR values by paired t-test evaluation

**Conclusions:**

Single‐unit plasma transfusions are relatively common in patients with both normal INR values and prolonged INRs. In patients with INR values >1.5, most were transfused prophylactically, as they did not have evidence of bleeding nor did they require warfarin reversal. Those patients with bleeding likely received suboptimal, non-hemostatic plasma doses. Though single-unit plasma transfusions provide a statistically significant decrease in INR, this change is of dubious clinical value. Thus, single-unit plasma transfusions likely represent inappropriate transfusions and opportunities for improved practice.