
Abstract:

BACKGROUND: There have been multiple reports concerning the predictors of fainting reactions in blood donors, but few attempts to reduce the rates of fainting reactions with concomitant rigorous attempts to monitor the success of the interventions.

STUDY DESIGN AND METHODS: We used a retrospective observational cohort study design, comparing the likelihood of reaction from 213,031 allogeneic whole blood donations made by 17- to 22-year-old donors in two separate 12-month periods before and after the implementation of interventions to reduce reactions. The interventions were 1) a limit on the maximum percentage of estimated blood volume young donors could donate, 2) encouraging applied muscle tension during donation, and 3) providing approximately 500 mL of water before donation. Reactions were defined by severity and time in relation to the end of phlebotomy and documented according to standard procedures. Data analysis included comparison of stratified reaction rates and multivariable logistic regression analysis.

RESULTS: The interventions decreased the aggregate reaction rates in male and female donors by 24% (p < 0.0001). There was a 25% decrease in delayed reactions (p = 0.0006) and a 38% decrease in off-site reactions (p = 0.001) in female donors. The impact of the
three interventions together on reaction rate was greater than the combined impact of exercises and water provision. Multivariable modeling showed that the interventions reduced reactions but did not prevent their occurrence in identified higher risk groups.

CONCLUSION: The interventions to reduce vasovagal reactions in whole blood donors were effective. Future efforts to reduce reactions in blood donors can build on the strengths and avoid the weaknesses identified while conducting and analyzing the data from this study.