response, but not relapse. The only laboratory abnormality that predicted relapse was the patient's pre-treatment platelet count.

S21-030E
Refractory Thrombotic Thrombocytopenic Purpura Following Vascular Surgery

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Background: Although thrombotic thrombocytopenic purpura (TTP) has been described following cardiovascular and abdominal surgery, the diagnosis of postoperative TTP is frequently delayed. Anemia and thrombocytopenia may be attributed to postoperative bleeding or platelet consumption. Several reported cases of postoperative TTP were treated with therapeutic plasma exchange (TPE). One-third of these cases died, from TTP or an underlying condition, but in 3 surviving patients, no relapse was reported at 19 months post treatment. We report a case of postoperative TTP refractory to TPE. Case Report: A 58 year-old African American female with peripheral vascular disease underwent left aorto-femoral bypass graft. One week after surgery she experienced tingling and numbness in both hands, followed by two episodes of slurred speech. When a facial droop developed she sought medical help. A right hemiparesis and bilateral subacute to chronic parietal infarcts on head CT were consistent with cerebrovascular accident. Laboratory tests showed thrombocytopenia and microangiopathic hemolytic anemia. VWF Cleaving protease (ADAMTS13) activity was low and ADAMTS 13 inhibitor was elevated (see table). Over the next few days the patient became confused and disoriented. A diagnosis of TTP was made. She was treated with daily TPE of one plasma volume with cryoprecipitate-reduced fresh frozen plasma. TPE was discontinued after 8 procedures and she appeared to be in neurologic and hematologic remission. However, 3 days later her LDH was 857 U/L. After 8 daily TPE and oral prednisone 1 mg/Kg/day, she again achieved remission. She was discharged on a steroid taper, but outpatient follow-up revealed rising LDH and dropping platelets, consistent with refractoriness. Her plasma showed low ADAMTS 13 activity and a very high inhibitor. She received 8 additional TPE, followed by splenectomy. At last follow-up one week post-splenectomy she was free of symptoms and signs of TTP.

Day	TPE#	Platelets/µl	LDH (U/L)	ADAMTS 13 Inhibitor (U)	ADAMTS 13 Activity (%)
1	1	15,000	3014	1.1	<6
8	8	379,000	511		
11	9	182,000	857		
18	16	264,000	508		
28	18	137,000	845	3.0	<6
Normal Range		(142,000-405,000/µl)	313-618 U/L	<0.4 U	67-177%

Conclusions: As far as we know, this is the first reported case of refractory TTP following vascular surgery. The very low level of ADAMTS 13 activity and high inhibitor level both at presentation and at diagnosis of refractoriness may correlate with the absence of a sustained response to TPE. Splenectomy may be a good therapeutic option in postoperative refractory TTP, as in other cases of refractory TTP.

S22-030E
Retrospective Evaluation of Baxter Amicus and Trima Accel for Platelet Collection in the Same Donor

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Background Demand for platelet products from our area hospitals continues to increase. To optimize supply, we have instituted a triage system that matches donors and technology to maximize platelet collections in a 90 minute donation. For each donor, triage begins with a review of prior donations, frequency, technology preference, ABO type, donor weight and previous platelet count. The triage then factors in the platelet pre-count done onsite with a QBC machine during the health history. At the end of the history, the phlebotomist will suggest the technology and procedure. We use both the Amicus Separator© software v2.5, double needle ("Amicus") and the Trima Accel Automated Blood Component Collection System© software v5.0, single needle ("Accel"). The donor can accept or reject the recommendation. Some donors qualify to donate on either Amicus or Accel and have no preference. We wish to understand which instrument to recommend for such donors when maximum platelet collection is the goal.
Methods Evaluate the platelet collection capabilities of Amicus and Accel. Retrospective data were collected on 31 donors who qualified to donate on both instruments. Each donated on Amicus and Accel, and typically completed both donations within a 3-5 week period. Results are presented in Table 1. Table 1: Results of Amicus and Accel

	Amicus v2.5	Trima Accel v5.0	p-value
sample	31	31	
weight* (Kg)	81+/–14	80+/–13	
height* (cm)	172+/–9	172+/–9	
preplatelet count* (x10^9/L)	300+/–70	308+/–68	
WB Processed* (mL)	4775+/–1199	3856+/–1057	<0.0001[a]
Collection Time* (mins)	73+/–17	71+/–18	
Overall Split Rate[1]	71%	39%	0.002
attempted products/donor[2]	2.03	1.61	<0.0001[c]
actual products/donor[3]	1.84	1.52	0.005[c]
attempted double split rate[2]	65%	35%	0.011[b]
actual double split rate[3]	58%	26%	0.005[b]
attempted triple split rate[2]	19%	13%	
actual triple split rate[3]	13%	13%	

*values represent mean+/–st. dev.
[a]paired t-test
[1]actual splits/total donors
[b]χ^2 test by SAS procedure CATMOD for comparing correlated proportions
[2]# targeted/total donors
[c]χ^2 test by SAS procedure CATMOD for comparing correlated mean scores
[3]# actual/total donors

Conclusions Amicus provides better platelet collection capabilities than Accel. We were able to target, and get, more platelet products per donor on Amicus than on Accel. Both our double split rate and overall split rate were much higher on Amicus. The split rate for triples was roughly equivalent. For donors who qualify to donate on either Amicus or Accel and have no preference for either, we would recommend Amicus when maximum platelet collection is the goal.

S23-030E
Multiple Platelet Component Collection and Donor Selection Using the Plateletpheresis Donor's Post Procedure Platelet Count the Trima and Trima Accel Algorithms

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Introduction: A plateletpheresis donor's ability to donate multiple platelet products is dependent on the donor's platelet count, total blood volume, and the post procedure platelet count used to select the donor. Based on concerns for donor safety, it is common practice to limit the donor's post procedure platelet count to ≥100,000 per uL. How that number is determined becomes important when configuring an apheresis system's minimum platelet post count. The Trima platelet post count predict algorithm is based on a simple mass balance equation with the number of platelets in the donor's blood pool, and the number of platelets put into the collect bag, determined. This conservative approach does not take platelet mobilization into account , a phenomenon known to occur for most donors. The purpose of this study was to evaluate platelet mobilization during Trima platelet collection procedures; and, based on that value, provide a recommendation for where to configure the Trima post procedure platelet count. Methods: A series of clinical studies were done where the donor's actual measured post platelet count was compared to the Trima predicted post count. The measured values came from an automated cell counter analysis of donor blood taken following the collection procedure, including rinseback. In the first study, data from 409 Trima system donors were analyzed and the ratio of measured to predicted platelet post count calculated. In the second study, 79 Trima Accel plaelet donors were analyzed. Results: The ratio of measured versus predicted post procedure platelet count for the 409 Trima donors was 1.27 ± 0.14. The ratio for the 79 Trima Accel donors was 1.28 ± 0.16. Discussion: These results show that following Trima platelet collection the donors have, on average, 27-28% more platelets than predicted. A donor predicted to have an 80,000 per uL post count would actually have 101,600 to 102,400 per uL circulating platelets. Linear regression analysis of the data showed that less than 4% of the donors had ratio's of 1.0 or less. Very few donors with typical platelet counts approach the post count disqualification level, so the risk of over depletion is very small. Conclusion: