

Supplemental Content

Supplemental Table 1. Glossary of the variables used for the logistic regression models

<u>Variable</u>	<u>Variable Type</u>	<u>Description</u>
act_post_prot_abnl	Dependent	1: the first ACT following the initial protamine dose was $\geq 110\%$ of the patient's baseline value 0: the first ACT following the initial protamine dose was $< 110\%$ of the patient's baseline value
prot_extra_given	Dependent	1: additional protamine was given 0: no additional protamine was given
act_baseline	Independent	Activated Clotting Time prior to surgery
age	Independent	Age at the time of surgery in years
asa_ps	Independent	American Society of Anesthesiologists Physical Status
cpb_dur_min	Independent	Duration of cardiopulmonary bypass in minutes
hep_pre_cpb_total	Independent	Heparin dose in units administered before onset of CPB
hep_total_inc_pump	Independent	Total heparin dose in units including amount given on bypass
inr_preop	Independent	International normalized ratio measured before surgery
prot_group	Independent	1: 250 mg protamine dose; 2: heparin-ratio protamine dose
reop	Independent	1: presence of prior cardiac surgery; 0: no presence of prior cardiac surgery
sternotomy	Independent	1: invasive (sternotomy); 0: minimally invasive (thoracotomy)
wt	Independent	Weight in kg
xclamp_dur_min	Independent	Duration of aortic cross-clamp in minutes

Supplemental Table 2. Logistic Regression for binary occurrence of an abnormal ACT after the first dose of protamine

Stata Model: act_post_prot_abnl prot_group age asa_ps reop sternotomy wt inr_preop hep_pre_cpb_total hep_total_inc_pump act_baseline cpb_dur_min xclamp_dur_min, level(95)

Observations: 124

Variable	Adjusted Values				Unadjusted (Univariate) Values	
	Odds Ratio (95% CI)	Odds Ratio P-Value	RRD (95% CI)	RRD P-Value	Odds Ratio (95% CI)	P-Value
prot_group	0.727 (0.310, 1.709)	0.47	-0.061 (-0.223, -0.223)	0.46	0.911 (0.449, 1.846)	0.80
age	0.996 (0.957, 1.035)	0.83	-0.001 (-0.008, -0.008)	0.83	1.000 (0.969, 1.031)	0.98
asa_ps	0.799 (0.189, 3.371)	0.76	-0.042 (-0.281, -0.281)	0.73	0.938 (0.270, 3.250)	0.92
reop	1.669 (0.163, 17.064)	0.67	0.098 (-0.343, -0.343)	0.66	1.020 (0.260, 3.992)	0.98
sternotomy	2.002 (0.717, 5.589)	0.19	0.133 (-0.060, -0.060)	0.18	1.429 (0.671, 3.041)	0.36
wt	1.005 (0.960, 1.052)	0.84	0.001 (-0.007, -0.007)	0.82	0.986 (0.962, 1.010)	0.25
inr_preop	2.464 (0.049, 124.855)	0.65	0.157 (-0.437, -0.437)	0.60	0.158 (0.008, 3.187)	0.23
hep_pre_cpb_total	1.000 (1.000, 1.000)	0.68	0.000 (0.000, 0.000)	0.53	1.000 (1.000, 1.000)	0.21
hep_total_inc_pump	1.000 (1.000, 1.000)	0.03	0.000 (0.000, 0.000)	0.15	1.000 (1.000, 1.000)	0.11
act_baseline	0.913 (0.873, 0.955)	<0.001	0.000 (0.000, 0.000)	0.67	0.925 (0.890, 0.961)	<0.001
cpb_dur_min	1.008 (0.973, 1.044)	0.66	0.001 (-0.003, -0.003)	0.55	1.001 (0.994, 1.008)	0.85
xclamp_dur_min	0.998 (0.959, 1.040)	0.94	0.000 (-0.008, -0.008)	0.94	1.001 (0.992, 1.009)	0.89
Estimated baseline odds	196292.8 (56.9, 6.8e+08)	0.003				

Abbreviations: RRD, relative risk difference; see Supplemental Table 1 for variable names

Supplemental Table 3. Logistic Regression for binary occurrence of a need for additional protamine after the initial dose

Stata Model: prot_extra_given prot_group age asa_ps reop sternotomy wt inr_preop hep_pre_cpb_total hep_total_inc_pump act_baseline cpb_dur_min xclamp_dur_min, level(95)

Observations: 124

Variable	Adjusted Values		RRD		Unadjusted (Univariate) Values	
	Odds Ratio (95% CI)	P-value	RRD (95% CI)	RRD P-Value	Odds Ratio (95% CI)	P-Value
prot_group	0.807 (0.335, 1.943)	0.63	-0.040 (-0.210, -0.210)	0.65	1.137 (0.530, 2.438)	0.74
age	0.977 (0.940, 1.016)	0.25	-0.005 (-0.011, -0.011)	0.15	0.988 (0.956, 1.021)	0.48
asa_ps	0.532 (0.124, 2.282)	0.40	-0.104 (-0.169, -0.169)	0.00	0.744 (0.204, 2.708)	0.65
reop	2.543 (0.281, 23.020)	0.41	0.179 (-0.261, -0.261)	0.43	3.144 (0.795, 12.438)	0.10
sternotomy	3.768 (1.271, 11.163)	0.02	0.242 (0.057, 0.057)	0.01	1.617 (0.727, 3.597)	0.24
wt	0.993 (0.958, 1.029)	0.70	-0.001 (-0.009, -0.009)	0.72	0.983 (0.957, 1.009)	0.19
inr_preop	39.395 (0.651, 2384.333)	0.08	0.243 (0.180, 0.180)	<0.001	3.156 (0.191, 52.182)	0.42
hep_total_inc_pump	1.000 (1.000, 1.000)	0.04	1.000 (1.000, 1.000)	0.05	0.000 (1.000, 0.000)	1.00
act_baseline	0.947 (0.907, 0.989)	0.02	1.000 (0.998, 0.998)	0.61	0.970 (0.940, 1.001)	0.06
cpb_dur_min	1.026 (0.991, 1.062)	0.15	1.022 (0.986, 0.986)	0.04	1.006 (0.998, 1.013)	0.13
xclamp_dur_min	0.986 (0.948, 1.026)	0.49	0.995 (0.987, 0.987)	0.44	1.006 (0.997, 1.015)	0.16
Estimated baseline odds	1746.0 (0.7, 4102569.0)	0.06				

Abbreviations: RRD, relative risk difference; see Supplemental Table 1 for variable names