

Table 1. Hypoglycemic case descriptions and root causes

Patient	Recent History Prior to Intraoperative Hypoglycemic Event	Lowest Intra-op BG (mg/dL)	Interval from Last Normal BG to Lowest BG (minutes)	Description of Root Cause	Preventable?
1	65-year-old type 2 diabetic man administered his routine insulin aspart 15-unit dose on the morning of surgery, despite instructions to hold the dose.	24	183	Verbal instructions to hold insulin on the morning of surgery did not result in effective communication; excessive insulin	Yes
2	61-year-old inpatient type 1 diabetic man received insulin glargine 22 units while NPO the night before surgery and became symptomatically hypoglycemic (BG = 27 mg/dL) prior to surgery. Treatment with dextrose and glucagon raised BG to only 89 mg/dL	26	131	Excessive insulin; inadequate dextrose infusion rate; inadequate preoperative BG monitoring; ineffective communication between medical team and OR team	Yes
3	61-year-old type 1 brittle diabetic woman was given regular insulin 2 units in the OR after an elevated preoperative BG but without a repeat BG.	26	156	Failure to recheck BG in the OR before giving insulin	Possibly
4	49-year-old type 2 diabetic inpatient man who received 70/30 insulin isophane and regular insulin mix 40 units before surgery while NPO, then was not monitored for six hours.	28	340	Excessive insulin; inadequate preoperative monitoring	Yes

5	41-year-old non-diabetic woman with a probable anaphylactic reaction to thymoglobulin* during a kidney transplant.	32	45	Anaphylactic reaction	No
6	54-year-old type 2 diabetic woman who was on an insulin infusion preoperatively but not monitored during the three hours before surgery	35	261	Inadequate preoperative monitoring; failure to follow insulin infusion protocol; inappropriate use of insulin infusion	Yes
7	56-year-old non-diabetic man received an insulin bolus with insufficient dextrose followed by an insulin infusion for mild hyperkalemia (potassium 5.4 mmol/L).	35	37	Inadequate dextrose dose for the insulin dose given; inappropriate use of insulin infusion	Yes
8	53-year-old type 1 diabetic woman had a normal preoperative BG and did not take insulin that morning but became hypoglycemic intraoperatively.	37	129	Unclear etiology; failure to document diabetic medications the patient may have taken the night before surgery	No
9	83-year-old non-diabetic woman with septic shock with untreated preoperative hypoglycemia that continued in the OR. Expired later that day.	19	52	Septic shock; ineffective communication between medical and OR team	No
10	68-year-old non-diabetic man with necrotizing fasciitis and hyperglycemia who developed borderline	20	54	Inadequate treatment of borderline hypoglycemia; failure to recheck BG; inappropriate use of insulin	Yes

	hypoglycemia while on an insulin infusion preoperatively. Treatment was not initiated and no further monitoring took place before entering the OR.			infusion; ineffective communication between medical team and OR team	
11	87-year-old non-diabetic man with septic shock. Following resuscitation from cardiac arrest, underwent emergent exploratory laparotomy. Progressive hypoglycemia ensued and patient expired later that day after family requested withdrawal of life support.	30	43	Septic shock	No
12	70-year-old non-diabetic paraplegic man with septic shock who had an emergent exploratory laparotomy and expired shortly thereafter.	30	60	Septic shock	No
13	71-year-old type 2 diabetic woman with septic shock and untreated preoperative hypoglycemia who underwent an emergent exploratory laparotomy.	32	223	Septic shock; ineffective communication between medical team and OR team	Possibly
14	75-year-old non-diabetic man with necrotizing fasciitis and septic shock who underwent a debridement and expired on postoperative day #2.	36	368	Septic shock	No
15	65-year-old type 2 diabetic woman noted to have	40	Unknown	Failure to recheck BG after hypoglycemic episode;	Yes

	preoperative asymptomatic hypoglycemia (36 mg/dL) which was treated without a follow-up BG. She underwent a lumbar spine washout, during which hypoglycemia was again noted and treated successfully.			inadequate treatment of hypoglycemia; ineffective communication between medical team and OR team	
16	47-year-old type 1 diabetic man underwent debridement for a fungal sinus infection. He received insulin detemir 20 units, regular insulin 20 units, and insulin lispro 4 units the morning of surgery for a BG = 261 mg/dL that dropped to 64 mg/dL, but was not treated with dextrose.	40	81	Excessive insulin; inadequate treatment of borderline hypoglycemia with no dextrose infusion; ineffective communication between medical team and OR team	Yes
17	75-year-old type 2 diabetic woman who underwent emergent coronary artery bypass grafting following a myocardial infarction and cardiac arrest. Preoperative BG was within normal range. The patient expired on postoperative day #8 from septic shock.	40	70	Cardiogenic shock	No

* Antithymocyte globulin. Johns Hopkins: The Harriet Lane Handbook, 19th ed. Available at: <http://www.mdconsult.com/das/pharm/body/278399424-3/0/full/2099>. Last accessed September 6, 2011