

Example 5 — Portland Diabetic Project Protocol

Furnary AP, Wu Y, Bookin SO. Effect of hyperglycemia and continuous intravenous insulin infusions on outcomes of cardiac surgical procedures: the Portland Diabetic Project. *Endocr Pract.* 204;10(suppl 2):21–33.

**Portland Continuous Intravenous Insulin Protocol (Version 2001):
Target Blood Glucose Level, 100 to 150 mg/dL**

1. Start “Portland Protocol” during surgical procedure and continue through 7 AM of the third postoperative day (POD). Patients who are not taking enteral nutrition on POD 3 should remain on this protocol until taking at least 50% of a full liquid or soft American Diabetes Association (ADA) diet.
2. For patients with no previous diagnosis of diabetes mellitus (DM) who present with hyperglycemia: start PDX protocol if blood glucose (BG) level >200 mg/dL. Consult endocrinologist on POD 2 for DM workup and follow-up orders.
3. Start insulin infusion through pump “piggybacked” to maintenance intravenous line, as follows:

Blood glucose (mg/dL)	Intravenous insulin bolus (U)	Initial insulin rate (U/h) (circle one)	
		Type 2 DM preoperatively	Type 1 DM preoperatively
80-119	0	0.5	1.0
120-179	0	1.0	2.0
180-239	0	2.0	3.5
240-299	4	3.5	5.0
300-359	8	5.0	6.5
≥360	12	6.5	8.0

4. Test BG level by finger-stick method or arterial line drop sample. The frequency of BG testing should be as follows:
 - a. If BG ≥200 mg/dL, check BG every 30 minutes.
 - b. If BG <200 mg/dL, check BG every hour.
 - c. When titrating vasopressors (such as epinephrine), check BG every 30 minutes.
 - d. If BG is 100 to 150 mg/dL with <15 mg/dL change *and* insulin rate has remained unchanged for 4 hours (“stable infusion rate”), then may test BG every 2 hours.
 - e. May stop every-2-hour testing on POD 3 (see items 5 and 8 below).
 - f. At night on telemetry unit:
 - If BG is 150 to 200 mg/dL, test every 2 hours.
 - If BG <150 mg/dL and stable insulin infusion rate exists, test every 4 hours.