ICU Insulin Orders – IV Insulin Infusion Protocol

TEXAS Department of State Health Services
Publication # E45-12614
TEXAS DIABETES COUNCIL
Revised 2/21/08

(Not intended for use in patients with type 1 diabetes, DKA or hyperglycemic hyperosmolar states)

1) **Start an IV Insulin Flow Sheet and keep record at bedside**

2) **Start IV:** _____ D5W at 100ml/h
_____ D5W½NS at _____ ml/h
_____ Other: _____

3) **Mix standard insulin drip**:
- 100 units Regular, aspart or glulisine insulin in 100 cc NS (1 unit insulin /cc) (Circle one)

4) **Give initial insulin bolus:**
- Bolus units of I.V. insulin = Glucose ÷ 100 (e.g. if glucose = 240 mg/dL, give 2.5 units)

5) **Start insulin infusion:**
- Initial infusion rate of insulin units/h = Glucose ÷ 100 (e.g. if glucose=240, begin 2.5 units/h)

6) **Target range for glucose:**
- Low Target (circle one) 70 100 or _____ mg/dL
- High Target (circle one) 110 120 140 or _____ mg/dL

7) **Monitor capillary (finger stick) glucose every hour:**
- Obtain ***lab*** glucose if finger stick BG is <40 or >400 mg/dL
- Change frequency of glucose monitoring to: _____

8) **Adjust insulin infusion rate each hour <u>after</u> initial insulin bolus and infusion**
- ❑ Start on Algorithm 1 (No patient begins on Algorithm 3 or 4 without endocrine service authorization)
- ❑ Start on Algorithm 2 (s/p CABG, transplant, glucocorticoids or >80 units/d insulin outpatient)
- Move up or down on the same algorithm each hour if glucose remains outside the target range
- Advance to the next algorithm (i.e. 1→2 etc.) if outside target range at highest infusion rate
- Treat for hypoglycemia is glucose <60 mg/dL (see # 9)
- Decrease 1 algorithm (i.e. 3→2 etc.) if glucose 60-69 mg/dL x 2 or decreases >60 mg/dL in 1 hour

Algorithm 1		Algorithm 2		Algorithm 3		Algorithm 4	
BG	units/h	BG	units/h	BG	units/h	BG	units/h
<60 = Hypoglycemia (See #9 for treatment)							
<70	Off	<70	Off	<70	Off	<70	Off
70–109	0.2	70–109	0.5	70–109	1	70–109	1.5
110–119	0.5	110–119	1	110–119	2	110–119	3
120–149	1	120–149	1.5	120–149	3	120–149	5
150–179	1.5	150–179	2	150–179	4	150–179	7
180–209	2	180–209	3	180–209	5	180–209	9
210–239	2	210–239	4	210–239	6	210–239	12
240–269	3	240–269	5	240–269	8	240–269	16
270–299	3	270–299	6	270–299	10	270–299	20
300–329	4	300–329	7	300–329	12	300–329	24
330–359	4	330–359	8	330–359	14	330–359	28
>360	6	>360	12	>360	16	>360	32

9) **Treat for hypoglycemia if glucose <60 mg/dL or _____ mg/dL.**

- Glucose 40-59 mg/dL: Give ½ ampule (12.5 grams glucose) D50W by slow IV push over 30 seconds.
- Glucose <40 mg/dL: Give 1 ampule D50W (25 grams glucose) by slow IV push over 30 seconds
- Decrease insulin drip rate by moving down 1 algorithm (i.e. from Algo 3 to Algo 2, etc.)
- Recheck glucose in 15 minutes and repeat D50W, as above, if necessary

10) **Call Endocrine Service if:**

- Other physicians make changes to subcutaneous or IV insulin regimen
- TPN, steroids or feedings are started, stopped or changed
- Other physicians turn off the insulin drip for any reason
- Patient does not respond to above pathways for glycemic control

11) **Transition from IV insulin to SC insulin:** *Proceed to the Insulin Transition Pathway*

Physician: _____ Time:_____ Date:_____