

Blood Sugars: Insulin Management in the ICU

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Citation

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Abstract

Traditional Thinking: Blood Sugar less than 200 is adequate ... after all, the kidney dumps sugar above 180.

2002 Thinking: The human system is designed to function with a Glucose between 80 and 120. It is a matter of will that we, as healthcare workers, force it to do otherwise.

The following is a suggested protocol to allow appropriate "blood sugar control" in the intensive care unit. We have employed its use successfully in a variety of units (i.e. trauma, surgical, medical) and believe that focusing specific attention at undue hyperglycemia is well-worth the effort required.

THE INSULIN-DRIP: TARGET 80 - 120

If Glucose is 121 - 150: Give 2 unit bolus injection and start drip at 2 units/hr.

If Glucose is 151 - 175: Give 3 unit bolus injection and start drip at 2 units/hr.

If Glucose is 176 - 200: Give 4 unit bolus injection and start drip at 3 units/hr.

If Glucose is 201 - 250: Give 6 unit bolus injection and start drip at 3 units/hr.

If Glucose is 251 - 300: Give 8 unit bolus injection and start drip at 4 units/hr.

If Glucose is 301 - 350: Give 10 unit bolus injection and start drip at 4 units/hr.

If Glucose is 351 - 400: Give 12 unit bolus injection and start drip at 5 units/hr.

If Glucose is above 401: Give 15 unit bolus injection and start drip at 5 units/hr.

Accuchecks q 1 hr. until Glucose is "steady-state" between 80 - 150, then q 2hrs ATC.

Adjust Drip Rate as Necessary to fit Target Parameters.

* Remember, the real goal is 80 - 120, but for practical reasons we accept 80 - 150.

* Hourly adjustments are usually in increments of 1-2 units (most patients seem to reach a "steady-state" in the range of 3-5 units/hr.). We have had multiple patients intermittently require rates of 8-12 units per hour.

Continue treatment until tolerating tube feeds at Goal for 48 hrs, then use the Daily Insulin Requirement (from the previous 24 hrs.), to estimate Initial NPH amount. Divide the 24-hour total in half and give as NPH am/pm. When the NPH is given, stop the Insulin Drip and continue Accuchecks q 1 hr. until "steady-state; once controlled, cover as needed with the "Tight-Scale" regimen q 4 hrs.

e.g. Steady-state achieved at 3 units/hr...24 hour total is 72 units. Total INITIAL NPH Dose is equivalent to 72 Units - divide in half and give 35 units NPH in the AM & 35 units NPH in the PM (and cover with q 4 hour Accuchecks for the first 2 days of transition).

If Accucheck is 71-80, hold Drip. Recheck in 1 hr. and adjust drip rate as needed.

If Accucheck is below 70, hold Drip and give 1/3 amp D50. Recheck in 1 hr and adjust drip rate as needed.

THE TIGHT-SCALE: TARGET 80 - 120

References

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