

A Retrospective Analysis of Once-daily versus Twice-daily Dosing of Insulin Glargine in Non-critically Ill Patients

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BACKGROUND / PURPOSE

Insulin is the treatment of choice for diabetes in the hospital.

There is some debate regarding the efficacy and safety of once-daily versus twice-daily insulin glargine in the hospital.

The purpose of this pilot study was to compare the efficacy and safety of insulin glargine administered as a once-daily versus twice-daily regimen in non-critically ill patients.

METHODS

This study was a retrospective chart review from June 1, 2020, to May 31, 2021.

Inclusion criteria included those who:

- (1) Were at least 18 years old, and
- (2) Received either once-daily (Group 1) or twice-daily (Group 2) insulin glargine for at least 72 hours during the specified time frame.

Exclusion criteria included those who:

- (1) Were COVID-19 positive, or
- (2) Were pregnant, or
- (3) Were prisoners, or
- (4) Were admitted for diabetic ketoacidosis or hyperosmolar hyperglycemic syndrome, or
- (5) Were managed on an intensive care unit at any time, or
- (6) Received steroids or an insulin drip.

The primary endpoint was a comparison of the number of days that all point-of-care blood glucose measurements were within the range of 70 to 180 mg/dL over a 24-hour period (0000-2359).

Secondary endpoints included the number of hypoglycemic (<70 mg/dL) and hyperglycemic (>180 mg/dL) events that occurred in each study group.

Disclosure
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Twice-daily insulin glargine did not demonstrate any benefits over once-daily insulin glargine in the non-critically ill population.

A prospective randomized controlled trial would be ideal to confirm the findings and investigate any cost savings of insulin glargine in the non-critically ill population.

RESULTS

Baseline Characteristics	Group 1 (n=101)	Group 2 (n=103)	p-value
Age (years), mean	63.2	63.6	0.7742
Male, n (%)	58 (57.4)	49 (47.6)	0.1645
LOS (days), mean	7.1	6.4	0.0762
Duration of therapy (days), mean	6.7	6.7	0.7519
BMI at admission (kg/m²), mean	33	35.6	0.0142*
Pre-admission A1C (%), mean	8.7	9.5	0.0220*
History of diabetes, n (%)	97 (97)	100 (100)	0.2462
Home insulin use, n (%)	89 (89)	94 (94)	0.3106

Primary and Secondary Outcomes	Group 1 (n=101)	Group 2 (n=103)	p-value
Days all POC-BG measurements were 70-180 mg/dL, mean	1.6	1.8	0.4522
Hypoglycemic events (BG < 70 mg/dL), mean	0.4	0.3	0.5775
Hyperglycemic events (BG > 180 mg/dL), mean	6.2	5.1	0.7424

Exploratory Outcomes	Group 1 (n=101)	Group 2 (n=103)	p-value
Inpatient daily bolus dose (units), mean	13.2	15.9	0.2181
Total glargine dose (units), mean	144.8	301.7	<0.0001*
Daily glargine dose (units), mean	21.7	45.3	-
Percentage of days all POC-BG measurements were between 70-180 mg/dL (%)	23.3	27	-

***Statistically significant**

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