

SUPPLEMENTARY TABLE S5. INTRASUBJECT GLYCEMIC DIFFERENCES BETWEEN BREAKFAST SCENARIOS

	<i>Altered bolus breakfast compared with standard bolus breakfast^a</i>		
	<i>Standard bolus delivered before meal</i>	<i>Over-bolus delivered with meal</i>	<i>No bolus delivered with meal</i>
Number of participants	30	32	38
Insulin delivery characteristics			
Cumulative basal insulin delivery at 4 h (% of open-loop basal)	+11% (-36%, +83%)	-29% (-60%, -9%)	+88% (+55%, +156%)
Cumulative basal plus bolus insulin delivery at 4 h (U) ^b	+0.6 (-1.3, +2.7)	+0.9 (-0.8, +2.2)	-1.6 (-4.3, -0.6)
Glycemic outcomes			
Metrics at start of meal			
Baseline glucose ^c	+13 (-11, +62)	-27 (-52, +27)	-6 (-56, +34)
Metrics over 4 h			
Number of patients with a YSI value ≤60 mg/dL			
Standard bolus only	0	0	0
Same outcome ^d	29 (97%)	30 (94%)	38 (100%)
Altered bolus only	1 (3%)	2 (6%)	0
Number of patients with a YSI value ≤70 mg/dL			
Standard bolus only	2 (7%)	1 (3%)	1 (3%)
Same outcome	25 (83%)	29 (91%)	37 (97%)
Altered bolus only	3 (10%)	2 (6%)	0
Number of patients with a YSI value >180 mg/dL			
Standard bolus only	2 (7%)	6 (19%)	1 (3%)
Same outcome	25 (83%)	25 (78%)	33 (87%)
Altered bolus only	3 (10%)	1 (3%)	4 (11%)
Number of patients with a YSI value >250 mg/dL			
Standard bolus only	9 (30%)	10 (31%)	1 (3%)
Same outcome	13 (43%)	22 (69%)	25 (66%)
Altered bolus only	8 (27%)	0	12 (32%)
Number of patients with a YSI value >300 mg/dL			
Standard bolus only	7 (23%)	9 (28%)	5 (13%)
Same outcome	20 (67%)	22 (69%)	25 (66%)
Altered bolus only	3 (10%)	1 (3%)	8 (21%)
Number of patients with a YSI value >400 mg/dL			
Standard bolus only	1 (3%)	0	1 (3%)
Same outcome	29 (97%)	31 (97%)	37 (97%)
Altered bolus only	0	1 (3%)	0
% of YSI values			
70 mg/dL	0% (0%, 0%)	0% (0%, 0%)	0% (0%, 0%)
71–180 mg/dL	-4% (-36%, +27%)	+27% (0%, +45%)	0% (-27%, +10%)
>180 mg/dL	0% (-27%, +43%)	-32% (-45%, -7%)	0% (-10%, +35%)
Mean glucose (mg/dL)	0 (-54, +48)	-38 (-78, -8)	+2 (-26, +54)
Glucose CV	+2% (-5%, +7%)	+1% (-7%, +8%)	+1% (-4%, +8%)
Nadir (mg/dL)	-10 (-44, +32)	-21 (-58, -1)	-1 (-49, +40)
Peak (mg/dL)	+5 (-88, +60)	-43 (-78, -10)	8 (-25, +67)
Excursion (peak minus baseline) ^c	-23 (-75, +36)	-25 (-58, +17)	+25 (-19, +75)
Area under the curve 180 (mg/dL/min) ^e	+3 (-40, +32)	-23 (-55, -1)	0 (-24, +37)
Number of patients with a hypoglycemia red light			
Standard bolus only	3 (10%)	5 (16%)	4 (11%)
Same outcome	23 (77%)	22 (69%)	32 (84%)
Altered bolus only	4 (13%)	5 (16%)	2 (5%)
Number of patients with a hypoglycemic treatment intervention ^f			
Standard bolus only	0	0	0
Same outcome	29 (97%)	31 (97%)	38 (100%)
Altered bolus only	1 (3%)	1 (3%)	0
Number of patients with a hyperglycemic treatment intervention ^f			
Standard bolus only	1 (3%)	1 (3%)	1 (3%)
Same outcome	29 (97%)	29 (91%)	37 (97%)
Altered bolus only	0	2 (6%)	0

(continued)

SUPPLEMENTARY TABLE S5. (CONTINUED)

	<i>Altered bolus breakfast compared with standard bolus breakfast^a</i>		
	<i>Standard bolus delivered before meal</i>	<i>Over-bolus delivered with meal</i>	<i>No bolus delivered with meal</i>
Metrics at 4 h			
Glucose at 4 h	-9 (-44, +51)	-39 (-84, -1)	+23 (-39, +62)
% of patients with a YSI value ≤60 mg/dL at 4 h			
Standard bolus only	0	0	0
Same outcome	30 (100%)	31 (97%)	38 (100%)
Altered bolus only	0	1 (3%)	0
% of patients with a YSI value ≤70 mg/dL at 4 h			
Standard bolus only	0	0	0
Same outcome	30 (100%)	31 (97%)	38 (100%)
Altered bolus only	0	1 (3%)	0
% of patients with a YSI value 71–180 mg/dL at 4 h			
Standard bolus only	7 (23%)	1 (3%)	10 (26%)
Same outcome	17 (57%)	19 (59%)	25 (66%)
Altered bolus only	6 (20%)	12 (38%)	3 (8%)
% of patients with a YSI value >180 mg/dL at 4 h			
Standard bolus only	6 (20%)	12 (38%)	3 (8%)
Same outcome	17 (57%)	20 (63%)	25 (66%)
Altered bolus only	7 (23%)	0	10 (26%)
% of patients with a YSI value >250 mg/dL at 4 h			
Standard bolus only	3 (10%)	3 (9%)	2 (5%)
Same outcome	26 (87%)	28 (88%)	33 (87%)
Altered bolus only	1 (3%)	1 (3%)	3 (8%)
% of patients with a YSI value >300 mg/dL at 4 h			
Standard bolus only	2 (7%)	2 (6%)	2 (5%)
Same outcome	28 (93%)	28 (88%)	35 (92%)
Altered bolus only	0	2 (6%)	1 (3%)
% of patients with a YSI value >400 mg/dL at 4 h			
Standard bolus only	0	0	0
Same outcome	30 (100%)	32 (100%)	38 (100%)
Altered bolus only	0	0	0

Data are median (25th, 75th percentiles) or *n* (%).

^aAltered bolus outcome – standard bolus outcome

^bIncludes the meal boluses, correction boluses, and insulin delivered by the controller.

^cTen baseline YSI values and excursions were missing (two with standard bolus delivered before meal, four with over-bolus delivered with meal, and four with no bolus delivered with meal).

^dSame outcome means standard bolus and altered bolus both had the event or both did not have the event.

^eArea under the curve calculated for each meal and divided by the time.

^fHypoglycemic treatments preceded by a red light were not counted as an intervention, and YSI values were not imputed. CV, coefficient of variation.