

Supplement Table 4. Clinical evidence of amylin analogues, GLP-1 receptor agonist, and intraperitoneal insulin delivery in artificial pancreas system

Year	Group	CGM	Pump	Design	No.	Age, yr	Setting	Duration	Intervention	Control	Outcome (intervention vs. control)
Amylin analogue											
2012 [142]	Yale University	Medtronic Sof-sensors	Paradigm 715	Single arm	8	15–18	Inpatient	24 hours	HCL+ pramlintide	HCL	Time to peak BG: 2.5 hours vs. 1.5 hours, $P<0.01$ Magnitude of glycemic excursion: 88 mg/dL vs. 113 mg/dL, $P<0.01$ Time to peak BG: 2.6 hours vs. 1.6 hours, $P<0.01$ Reduction incremental BG AUC ($P<0.01$)
2016 [143]	Yale University	Medtronic Sof-sensors	Paradigm 715	Single arm	10	15–18	Inpatient	24 hours	HCL+ pramlintide	HCL	Reduction incremental BG AUC ($P<0.01$)
2018 [144]	Oregon	Dexcom G4 Platinum	Paradigm Revel	RCT, crossover	34	18–70	Inpatient	24 hours	SAP (Insulin+ pramlintide)	SAP (insulin+ placebo)	TTR 70–180: 61.5% vs. 50.2%, $P=0.046$ TBR <70: 7.4% vs. 3.7%, $P=0.47$
2020 [40]	IRCM	Dexcom G5	MiniMed Paradigm Veo or 630G	RCT, crossover	28	>18	Inpatient	24 hours	Dual HCL (insulin+ pramlintide)	HCL	TTR 70–180: 84% vs. 74%, $P<0.01$ TBR <70: 0.0% vs. 1.2%, $P=0.43$
GLP-1 receptor agonist											
2014 [148]	Albert Einstein	Medtronic Sof-sensors	Paradigm 715	RCT, crossover	10	18–30	Inpatient	27 hours	HCL+ exenatide	HCL, HCL+ pramlintide	TTR 80–180: 77% vs. 61%, $P=0.03$ (HCL+exenatide vs. HCL) TTR 80–180: 62% vs. 61%, $P=0.83$ (HCL+pramlintide vs. HCL)
2016 [41]	Albert Einstein	Medtronic Enlite	Medtronic Paradigm	RCT, crossover	15	18–40	Inpatient	2 days	HCL+ liraglutide	HCL	Mean BG: 144.6 mg/dL vs. 159.7 mg/dL, $P<0.01$ 2-hour postprandial BG: better in liraglutide arm, $P<0.05$
2016 [143]	Yale University	Medtronic Enlite	Paradigm 715	Single arm	10	15–18	Inpatient	24 hours	HCL+ liraglutide	HCL	Reductions in BG excursions ($P=0.05$) Incremental BG AUC ($P<0.01$)
Intraperitoneal											
2010 [154]	Montpellier University	Medtronic	Medtronic MMT-2007D	RCT, crossover	8	18–70	Inpatient	48 hours	IP HCL	IP pump	TTR 80–120: 39.1% vs. 27.7%, $P=0.05$ TBR <60: 1.6% vs. 0.6%, $P=0.69$
2017 [42]	UC Santa Barbara	Dexcom Seven Plus	Rosche DiaPort system	Single arm	10	18–65	Inpatient	24 hours	IP FCL	SC FCL	TTR 70–180: 65.7% vs. 43.9%, $P<0.01$ TBR <70: 2.5% vs. 4.1%, $P=0.42$

The unit of TTR and TBR target is mg/dL.

GLP-1, glucagon-like peptide 1; CGM, continuous glucose monitoring system; HCL, hybrid closed-loop system; BG, blood glucose; AUC, area under curve; RCT, randomized control trial; SAP, sensor augmented pump; TTR, time in range; TBR, time below range; IRCM, Institut de Recherches Cliniques de Montreal; IP, intraperitoneal; FCL, full closed-loop system; SC, subcutaneous.