retrospectively pre and one year post pump usage. Follow up HbA1c was thereby done for all patients and for up to 20 patients HbA1c data was collected reaching 4 years.

Results:

Change in HbA1c

	1st Year	2nd Year	3rd Year	4th Year
Decrease in HbA1c from Baseline	1.43%	1.08%	1.15%	1.26%

	MDI	CSII
Social family relations	65	70
Dietary restrictions	62	79
Fear of hypoglycemia	61	76
Physical complaints	68	81
worries about the future/ complications of Diabetes	50	69
Treatment satisfaction	51	71

scores are given as a percentage; the higher the score the greater the quality of life.

Conclusions: Our survey suggested improvement in HbA1c when comparing CSII to MDI with an greater QOL and improvement in treatment satisfaction while on pump therapy. While the survey was basic with several limitation, they mimic results of pump therapy that has been seen in countries with vast insulin pump experience and more resources available. This would suggest that these benefits can also be replicated in countries with limited resources with small dedicated pump training centres.

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AUTOMATIC SUPER-BOLUS AND BOLUS SHAPING FEATURES FOR INSULIN PUMPS

F. Garelli[1], N. Rosales[1], J. Vehí[2], H. De Battista[1]

[1]LEICI, EE, La Plata, Argentina
[2]UdG, EE, Girona, Spain

Background and Aims: This work presents a method for automatic insulin bolus shaping based on residual insulin or insulin-on-board (IOB) estimation as an extra feature for commercial insulin pumps. Among other potential applications, this methodology allows the pump to automatically generate the so-called super-bolus for the compensation of high glycemic index meals, which has been recently related to the best theoretical basal-bolus combination for the reduction of glucose excursions under open-loop treatment.

Methods: The method computes the individual extra amount of bolus and basal cutoff time from the duration of insulin action (DIA) of the patient using a physiological compartmental model for subcutaneous insulin absorption. Then, by means of a simple switching law, it automatically reestablishes basal insulin when IOB reaches its basal level, thus avoiding unnecessary detrimental transients generated with manual or a-priori computations.

Meal		Adolescents	Adults	Children
25g	Hypo	-	-	37.25%
	Hyper	23.86%	-	50.43%
50g	Hypo	100%	100%	65.16%
	Hyper	88.83%	-	-
70g	Hypo	34.03%	16.84%	81.3%
	Hyper	36.15%	78.69%	0.68%
100g	Hypo	67.43%	41.62%	43.87%
	Hyper	13.50%	36.84%	14.39%

Results: The potential of this method, registered on patent and priority requests, are illustrated via in-silico trials including intra-patient variability and mixed meals. The table below shows the time in hyper and hypoglycemia reduction achieved with the proposed automatic SB with respect to standard treatment for a cohort of 30 patients facing a high glycemic index mixed meal of 25g, a mixed meal of 50g, and a 75g and 100g of CHO meal.

Conclusions: A novel automatic algorithm for open-loop treatment is introduced, based on the super bolus treatment and the IOB profile of the patient. This algorithm can be easily loaded into any medical device software and depends only on the DIA of the patients.

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EFFECT OF DIFFERENT TYPES OF INSULIN THERAPY ON TRANSPLANT STATE, METABOLIC CONTROL IN PATIENTS WITH TYPE 1 DIABETES AFTER KIDNEY TRANSPLANTATION

A. Glazunova[1], E. Tarasov[1], M. Shamkhalova[1], G. Musaeva[2], M. Shestakova[1,3], Y. Moysyuk[4]

[1]Federal Endocrinology Research Centre, Institution of Diabetes, Moscow, Russia
[2]I.M. Sechenov First Moscow State Medical University, Institution of Ophthalmology, Moscow, Russia
[3]I.M. Sechenov First Moscow State Medical University, Institution of Diabetes, Moscow, Russia
[4]Moscow Regional Research and Clinical Institute ''MONIKI'', Institution of Trasplantology, Moscow, Russia

Background and Aims: To evaluate the impact of different types of insulin therapy (continuous subcutaneous insulin infusion (CSII) using insulin pump or multiple insulin injections (MII)) on carbohydrate metabolism, the state of the transplant in patients with type 1 diabetes (DM1) after kidney transplantation (KT).

Methods: The study included two groups of patients with DM1 after transplantation: 1) 21 patients treated with CSII; 2) 20 with MII. Mean duration of diabetes in the first group was 25 years[20.5;34.5], the second group - 24.5 years [20;30]. Posttransplantation period in both groups was comparable: 8.0[7.0;36.0] and 7.5 [7.0:19.0] months.

Results: The mean level of glycated hemoglobin (HbA1c) in groups before the study did not differ: 9.0%[8.0;9.6] and 9.0%[8.7; 9.8]. When patients were transfer into CSII-HbA1c