

# Routine use of continuous subcutaneous insulin infusion in a cohort of Type 1 Diabetes patients attended in a Diabetes Reference Unit

## INTRODUCTION

► Continuous subcutaneous insulin infusion (CSII) is an increasingly common effective option in Type 1 Diabetes (T1D) management. Data on its efficacy, safety and use come frequently from clinical trials or retrospective controlled studies.

## OBJECTIVES

► To analyse the characteristics of the routine use of CSII in a large cohort of patients attended in a Diabetes Reference Unit and its relationship with glycaemic control.

## MATERIAL AND METHODS

Baseline characteristics (n=338)	
Sex	♀ 218 / ♂ 120
Age (years)	43.4 ± 13.1
Diabetes duration (years)	27.1 ± 9.9
Years on CSII	9.3 ± 4.8
Sensor use	32 (9.5%)
Main CSII indication:	
Poor glycaemic control	172 (50.9%)
Hypoglycaemia	97 (28.7%)
Poor control + hypoglycaemia	43 (12.7%)
Pre-gestational control	17 (5.0%)

T1D patients using CSII with either a Veo® or 640G® Medtronic-Minimed pump linked to a glucometer (Contour Next Link/2.0/2.4, Bayer®). Data from 14 consecutive days were collected from uploads in CareLink® software and HbA1c was obtained from medical records.

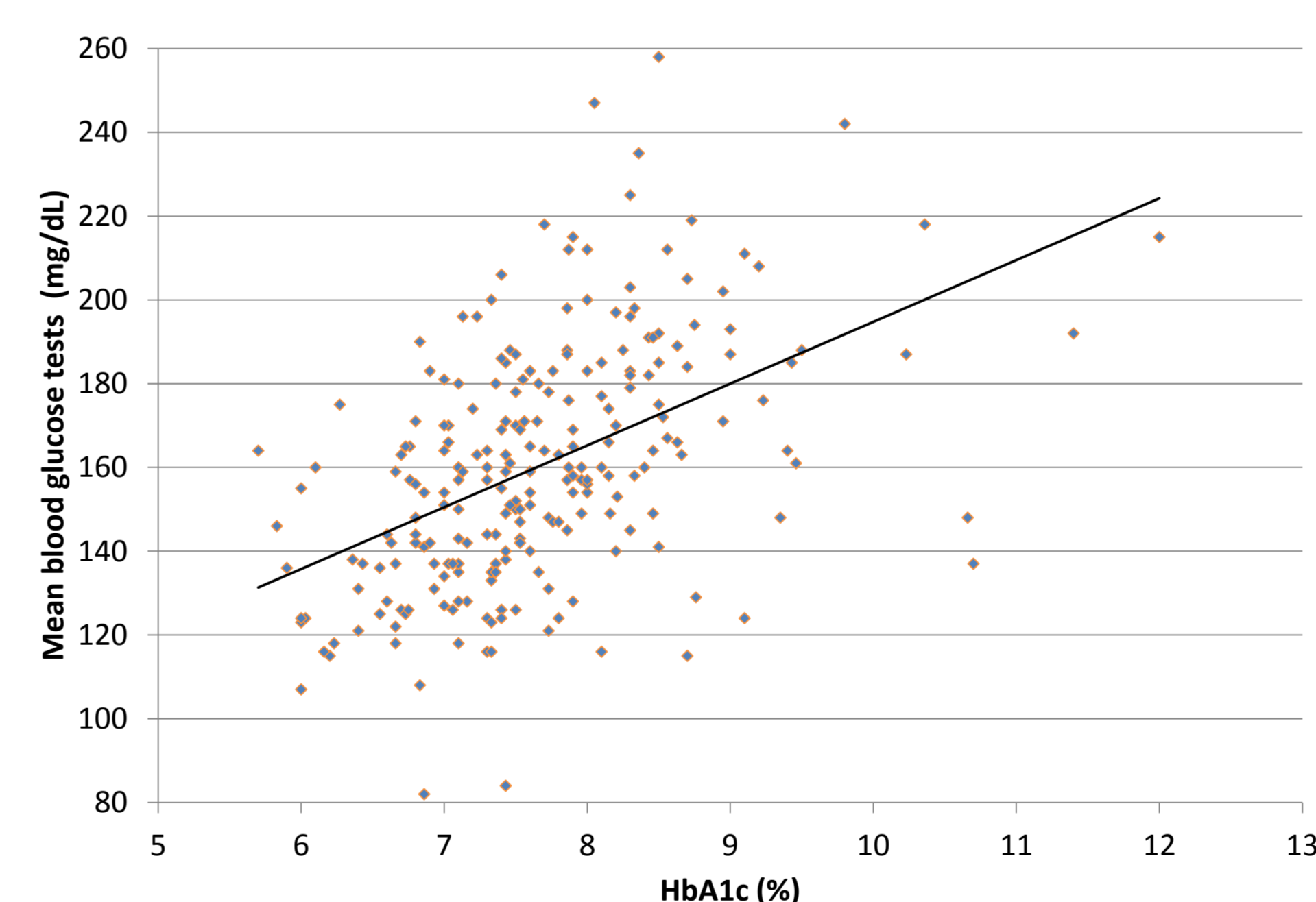
Differences in the use of CSII were analysed depending on metabolic control status and the use of continuous glucose monitoring (CGM).

## RESULTS

### 1. CSII use and relationship with glycaemic control

	Group	HbA1c ≤ 7.5%	HbA1c > 7.5%	p
Blood tests/day	4.4 ± 2.1	4.9 ± 2.1	4.0 ± 2.0	<0.001
Bolus/day	4.9 ± 3.4	5.4 ± 1.9	4.6 ± 2.2	0.021
% Bolus wizard	78.9 ± 32.1	77.3 ± 34.0	80.2 ± 29.5	0.408
% Insulin as bolus	47.5 ± 13.3	49.8 ± 13.5	45.6 ± 13.1	0.040
High BW objective day	119.6 ± 14.5	118.2 ± 14.2	120.8 ± 14.6	0.138
Low BW objective day	96.7 ± 10.9	95.5 ± 11.6	96.4 ± 10.2	0.480
High BW objective night	128.6 ± 13.6	126.4 ± 14.5	130.3 ± 12.6	0.010
Low BW objective night	104.6 ± 14.6	103.9 ± 14.0	105.1 ± 15.0	0.449
Basal segments/day	6.0 ± 1.8	6.3 ± 2.0	5.8 ± 1.7	0.022

### 2. Relationship between HbA1c – Mean capillary blood glucose



Group HbA1c: 7.7 ± 1.0%

r = 0.63; p < 0.001

### 3. CGM users vs non users

HbA1c (%): Sensor: 7.5 ± 0.8  
No sensor: 7.7 ± 1.0 → p = 0.165

- No differences in the baseline characteristics were observed.
- Patients using CGM:
  - More bolus/day (6.5 ± 3.6 vs. 4.6 ± 1.6; p<0.001)
  - More bolus wizard/day (5.1 ± 4.0 vs. 3.7 ± 2.0; p=0.046)
  - More time of pump suspension (1212.9 ± 1244.4 vs. 188.7 ± 570.4 min/14days; p<0.001)

## CONCLUSIONS

- Routine use of CSII by subjects with T1D in routine clinical care is not far from expected and usually recommended.
- The frequency of blood tests/day, bolus and number of basal segments/day were associated with a better glycaemic control in terms of HbA1c.