REAL-TIME CONTINUOUS GLUCOSE MONITORING IN PATIENTS WITH TYPE 1 DIABETES TREATED WITH MULTIPLE INSULINE DAILY INJECTIONS

Lucía Lázaro Martín[1], Claudia García Lobato[1], Fabiola Gallego Gamero[1], Estela Gil Poch[2], Francisco Javier Arroyo Díez[2], Pilar Isabel Beato Víbora[1].
[1]Department of Endocrinology and Nutrition, Badajoz University Hospital, Badajoz, Spain.
[2]Department of Paediatrics, Badajoz University Hospital, Badajoz, Spain

INTRODUCTION

Strict metabolic and glycemic control prevents the development and evolution of microvascular complications of Type 1 DM (T1D). *Diamond, Gold* and *HypoD* trials have shown the usefulness of Real-Time Continuous Glucose Monitoring (RT-CGM) systems in patients with T1D in treatment with multiple daily injections (MDI).

AIMS

Our aim was to analyze the effectiveness of RT-CGM in glycemic control in patients T1D, children and adults, treated with MDI in real-world use.

METHODS

We retrospectively analyzed data of all patients with T1D in follow-up in the Badajoz University Hospital who received treatment with MDI and used RT-MCG. Age, sex, time of evolution of diabetes, daily insulin dose, type of basal insulin administered, MCG device used and duration of use of RT-GCM were evaluated. HbA1c was compared before the start of the RT-CGM and at the end of the follow-up.

RESULTS

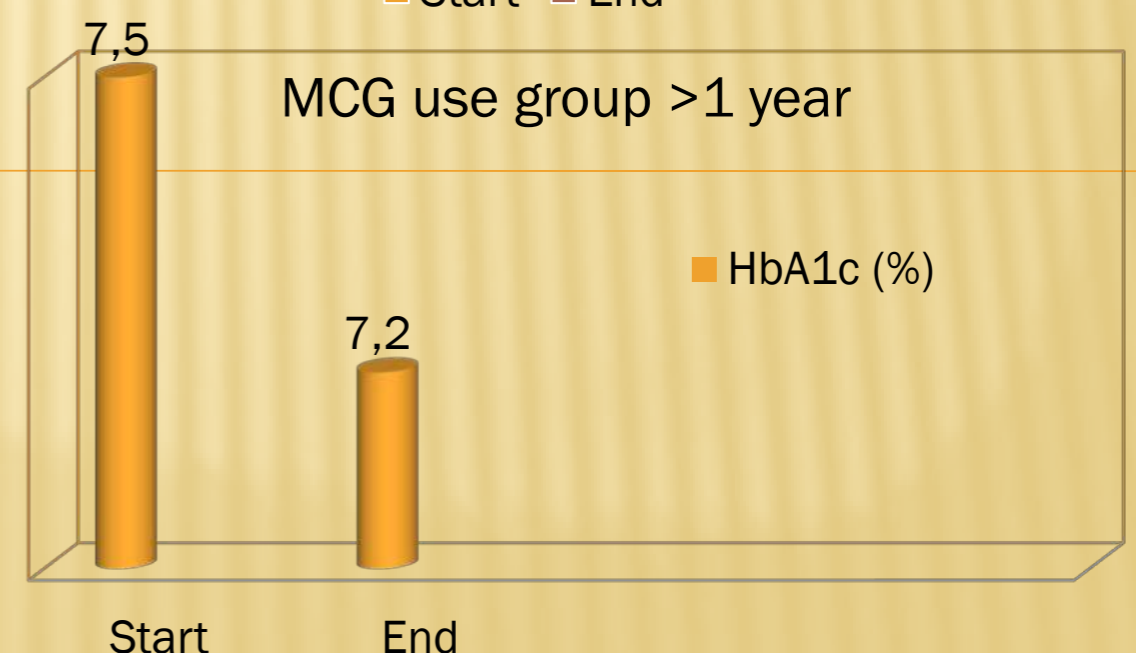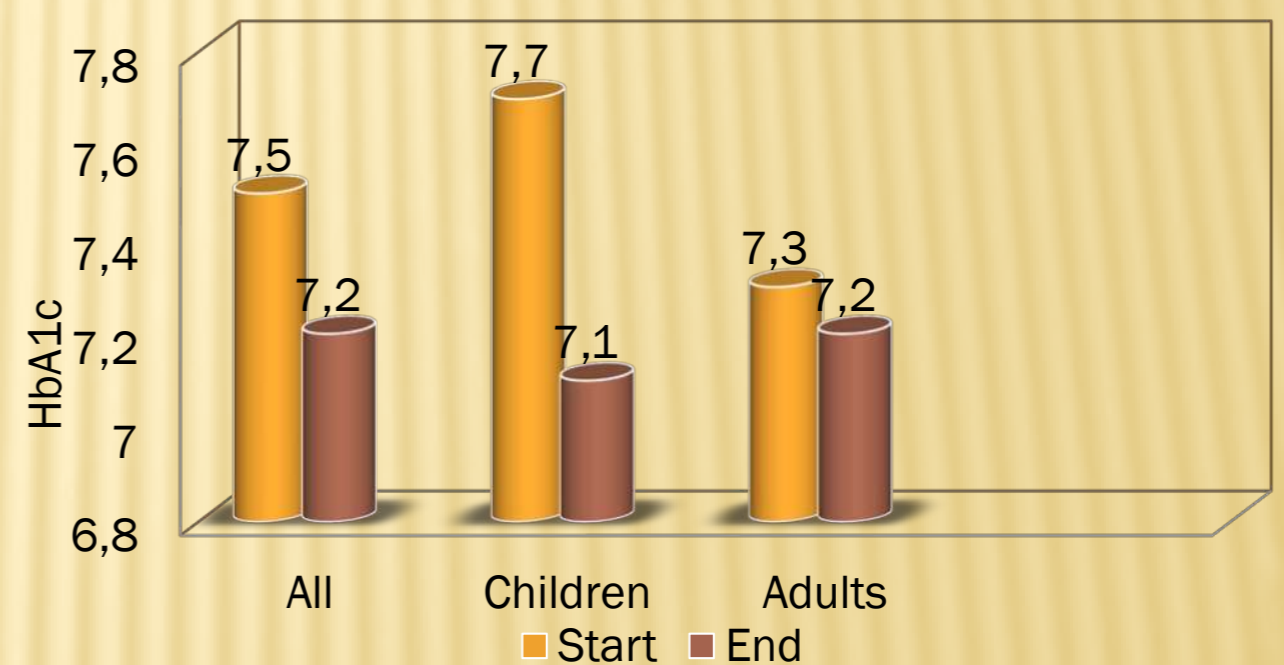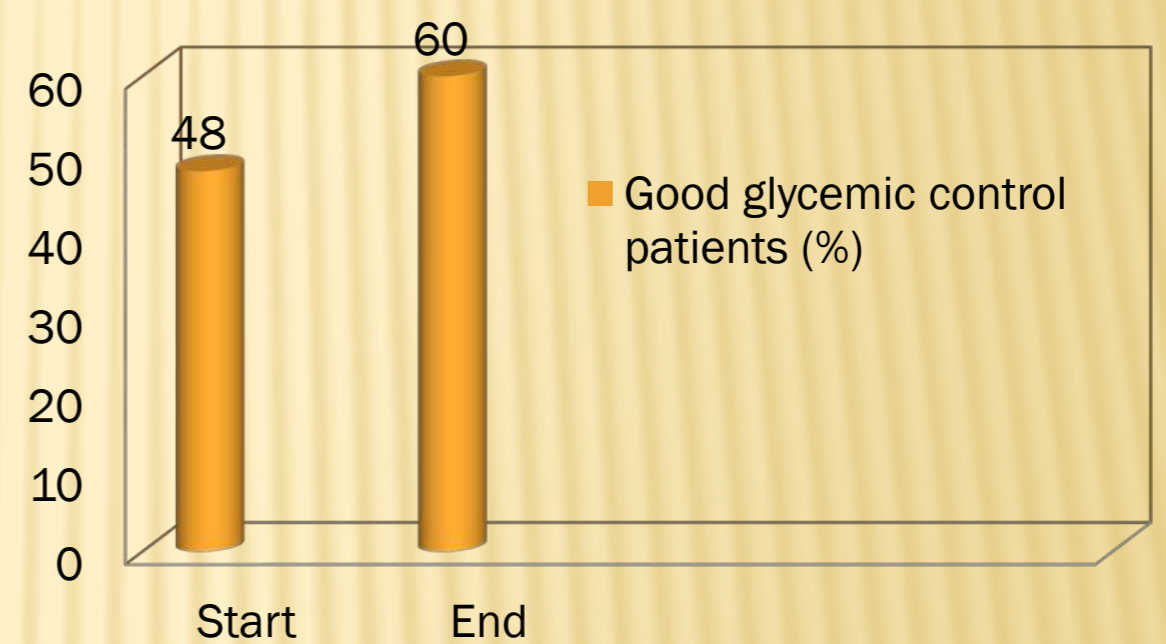98 patients were evaluated. Duration of RT-CGM use was 9 months [4-24]. 8 patients started an integrated pump-sensor system after 7 months [5-14] of MCG use; only 3 patients stopped using the RT-CGM for lack of improvement.

The percentage of patients with good glycemic control (HbA1c ≤7% in adults and ≤7.5% in children) grew from 48% to 60% ($p=0.001$, n=73) at the end of follow-up.

Demographic characteristics	
Age (years) media ± SD	34 ± 19
Children(< 18 years) (%)	29
Sex, men (%)	56
Evolution time of Diabetes (years) media ± SD	14 ± 12
Insuline doses (U/Kg) media ±SD	0.7± 0.3
Basal Insuline(%)	
Degludec	34
Glargina U100	32
Glargina U300	14
Detemir	6
NPH	1

MCG device	(%)
DEXCOM®	89
DEXCOM-G4®	52
DEXCOM-G5®	37
GUARDIAN MEDTRONIC ®	11
GUARDIAN REAL TIME®	9
GUARDIAN CONNECT®	2

Good glycemic control patients (%): Start 48, End 60

HbA1c — Start vs End: All 7,5 / 7,2; Children 7,7 / 7,1; Adults 7,3 / 7,2

MCG use group >1 year — HbA1c (%): Start 7,5, End 7,2

CONCLUSIONS

Use of RT-CGM in T1D patients treated with MDI provides sustained positive results in terms of improvement of the glycemic control with a low dropout rate.