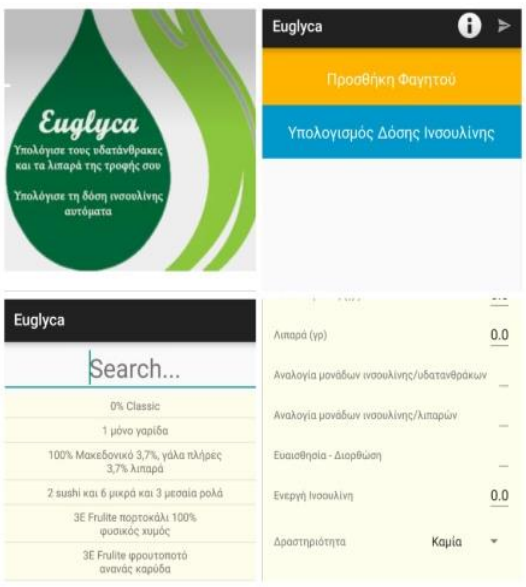
MOBILE APPLICATION "EUGLYCA" IN MANAGEMENT OF DIABETES MELLITUS TYPE 1 IN CHILDREN AND ADOLESCENTS

Chatzakis,C.(1)*;Floros ,D.(2);Tsiroukidou,K.(1);Vamvakis,A.(1);Kosta,K.(1);Tsanakas,I.(1);Papagianni,M.

(1) Endocrine Unit,3rd Department of Pediatrics, Aristotle University of Thessaloniki, Hippokration University Hospital
(2) Aristotle University of Thessaloniki, Department of Electrical Engineering

Introduction

Euglyca is a mobile application that we developed for patients with diabetes.
It calculates the amount of **carbohydrates** and **lipids** that a patient consumes during a meal and by taking into consideration eight more parameters (pre-meal blood glucose, targeted blood glucose, insulin/carbs and insulin/lipids ratio, insulin sensitivity, active insulin, physical activity, illness) calculates the required **bolus dose of insulin.**
Aim of this study is to evaluate the efficacy of this application on patient's glycemic control and satisfaction.



Methods

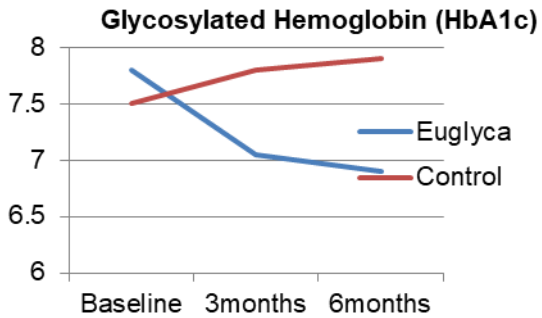
80 children and adolescents with T1DM were included in the study and were randomly assigned in two groups.

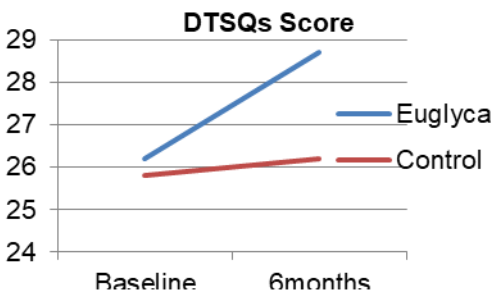
- 40 of them used the application
- the rest were controls

At the baseline, three months and 6 months later, Glycosylated Hemoglobins (Hba1c) levels were determined and amount of hypoglycemias, hyperglycemias and normoglycemias were calculated for each patient .
In addition, Diabetes Treatment Satisfaction (DTSQ) was used to assess patient's satisfaction.

Results

- In the target group **HbA1c** dropped from 7,8±0.75 at baseline to 7.05±0.59 in 3 months and 6.9±0.61 in 6 months. (p<0,001)
- In the target group **Normoglycemias** increased from 48.3%±10,9 at baseline to 62.3%±10,2 in 3 months and 58.3±10,1 in 6 months (p=0.01).
- In the target group **treatment satisfaction** increased. DTSQs score increased from 26.8±3.6 at baseline to 28.7 ±3.7 in 6 months. (p=0,026).





Conclusions

Mobile application "Euglyca" improves the glycemic control and satisfaction of children and adolescents with T1DM, however further research is needed to drew final conclusions.

References

A. S. Gandolfo, D. V. Bastos, B. A. J. Makluf et al., "Efficacy of photographic educational materials for carbohydrate counting training of adolescents with diabetes mellitus,"NutricionHospi- talaria,vol.29, no.2,pp. 344–349, 2014.