EFFICACY OF A FIXED-RATIO COMBINATION OF INSULIN DEGLUDEC AND LIRAGLUTIDE IN THE TREATMENT OF TYPE 2 DIABETES MELLITUS

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INTRODUCTION

Based on the current recommendations, a fixed-ratio combination of insulin degludec and GLP-1 agonist liraglutide (IDegLira) is considered to be an equivalent alternative to an intensified insulin regimen for type 2 diabetes mellitus (T2DM). As a once-daily injection with effects on both fasting and postprandial hyperglycemia (Fig. 1), IDegLira provides according to several studies optimal glycemic and metabolic control. [1]

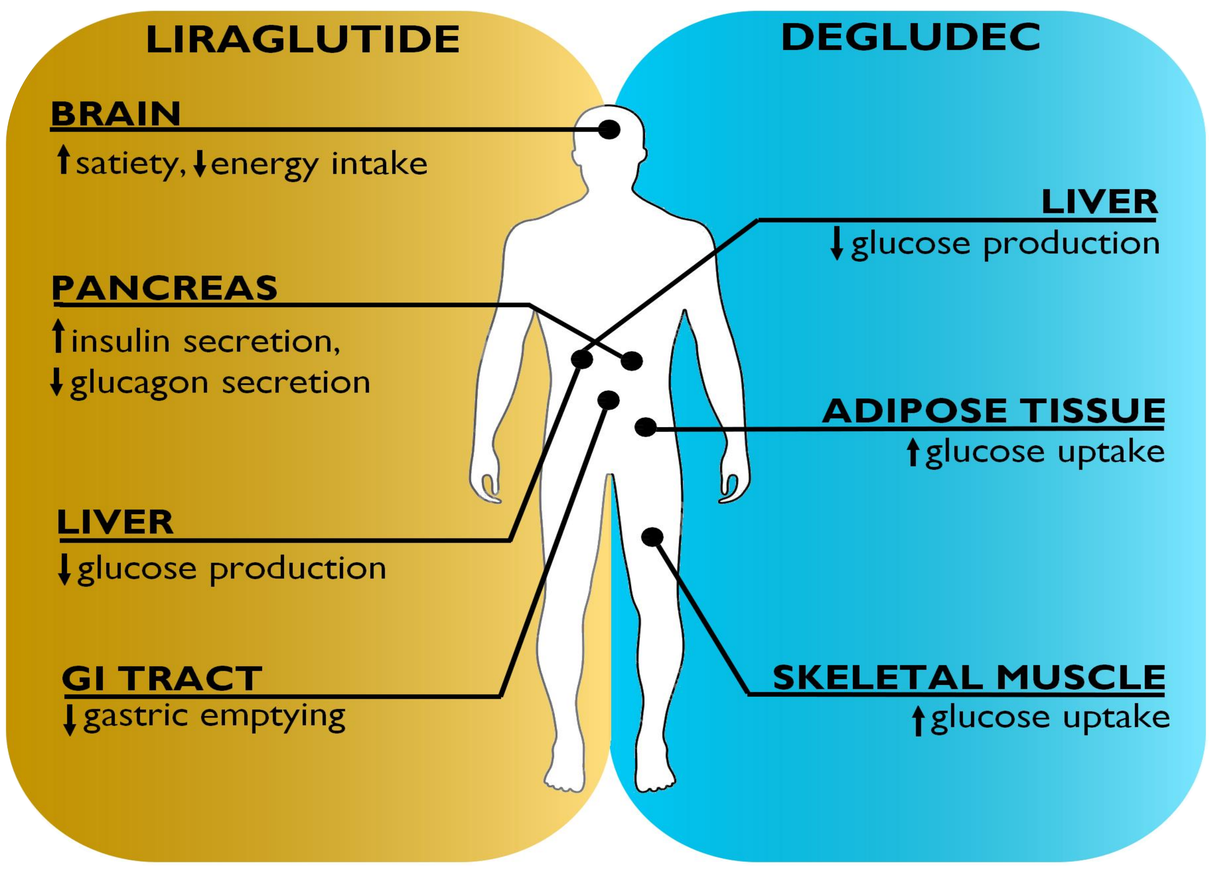

Figure 1. Complementary effects of IDegLira on both postprandial and fasting plasma glucose. [2]

OBJECTIVES

To determine the effectiveness of IDegLira in the reduction of glycemic parameters, body weight and lipid profile parameters in patients with diagnosis of type 2 diabetes mellitus after one-year treatment period.

STUDY DESIGN

A retrospective observational study was conducted in a diabetic clinic of a regional hospital. Clinical data and demographic characteristics were obtained from computerised medical records and processed by Microsoft Excel. Overall, there were selected fifty-two participants with T2DM who were treated with IDegLira in addition to oral antidiabetic drugs for at least 52 weeks between October 2016 and January 2018. The effectiveness of IDegLira was analysed through measuring selected parameters (Fig. 2) at the beginning of the treatment and at week 52.

Glycemic parameters	Physical parameters	Lipid profile parameters
Glycated haemoglobin (HbA1c)	Body weight	LDL-cholesterol (LDL-C)
		HDL-cholesterol (HDL-C)
Fasting plasma glucose (FPG)		Total cholesterol (TC)
		Triglycerides (TAG)

Figure 2. The selected parameters.

RESULTS

Baseline characteristics are listed in Figure 3. After 52 weeks the mean HbA1c decreased from a baseline of 72,3 ± 1,4 mmol/mol by 7,3 ± 1,8 mmol/mol ($p < 0,001$; Fig. 4). The mean FPG was reduced from a baseline of 9,6 ± 0,4 mmol/L by 1,5 ± 0,4 mmol/L ($p < 0,001$; Fig. 5). Average weight loss was -0.45 ± 0,32 kg ($p = 0,161$; Fig. 6). Mean changes in lipid profile parameters such as total cholesterol, LDL-cholesterol and triglycerides were statistically insignificant except for HDL-cholesterol which increased from a baseline of 1,06 ± 0,05 mmol/L by 0,04 ± 0,02 mmol/L ($p = 0,014$; Fig. 7).

Variable	Value
Full analysis set (FAS), *n*	52
Female/male, %	48/52
Age, *years* (range)	61,2 ± 1,5 (38–78)
Weight, *kg*	98,6 ± 2,8
BMI, kg/m^2	35,2 ± 0,8
D2MT duration, *years* (range)	8,5 ± 0,5 (2,8–19,9)
HbA1c, *mmol/mol*	72,25 ± 1,41
FPG, *mmol/L*	9,60 ± 0,37
Total cholesterol, *mmol/L*	4,34 ± 0,15
HDL-cholesterol, *mmol/L*	1,06 ± 0,03
LDL-cholesterol, *mmol/L*	2,25 ± 0,11
Triglycerides, *mmol/L*	2,22 ± 0,17

Figure 3. Baseline characteristics.

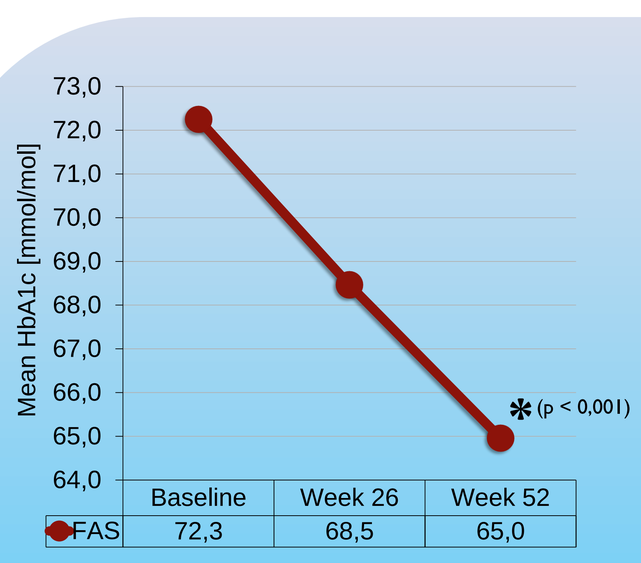

Figure 4. The decrease in HbA1c.

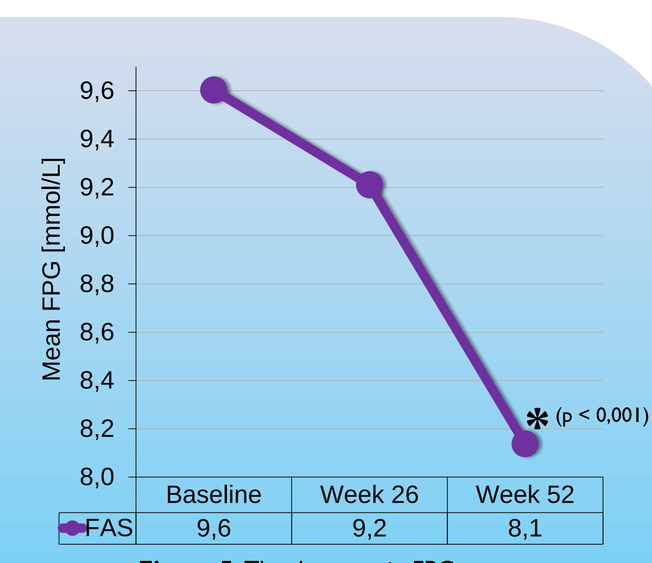

Figure 5. The decrease in FPG.

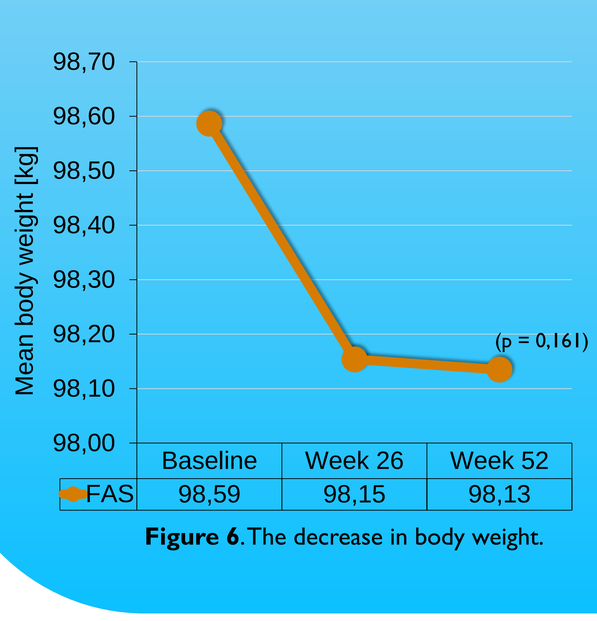

Figure 6. The decrease in body weight.

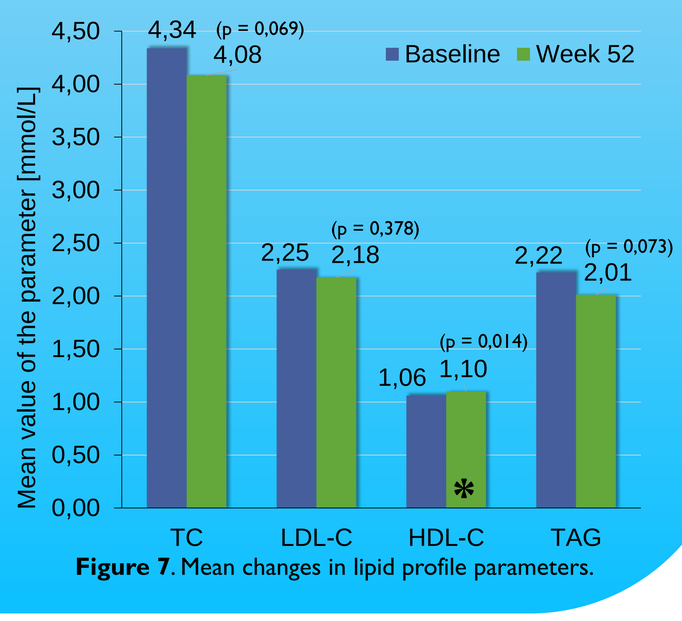

Figure 7. Mean changes in lipid profile parameters.

DISCUSSION

Observed reduction in selected parameters relates to benefits of IDegLira which include simplified treatment schedule leading to increased adherence to therapy, and parallel targeting on several pathophysiological pathways of diabetes. [3]

Compared to the data from DUAL Clinical Trial Program, the reduction of glycemic parameters attained in this study was less pronounced presumably due to the smaller number of participants and different baseline characteristics. [4], [5]

CONCLUSIONS

Conducted study confirms positive impact of IDegLira on glycemic compensation in patients with T2DM as a statistically significant decrease in parameters of glycemic control was achieved. On the contrary, the weight reduction and almost all the changes in plasma lipid concentrations were insignificant.

eahp european association of hospital pharmacists

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