Case Report

Short-term monotherapy with Liraglutide for weight management: A case study

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Abstract

Background: Liraglutide 3 mg was approved by the FDA as an antiobesity drug. A recent study reported that short-term treatment with Liraglutide (20.0 ± 6.4 days) reduces body weight. **Case Presentation:** A 35-year-old male not having any medical illness was presented for medical weight-loss management. He was taking Liraglutide (Saxenda) by SC solution multidose pen 0.6 mg in the first week, 1.2 mg in the second week, 1.8 mg in the third week, 2.4 mg in the fourth week, and 3.0 mg in the fifth week, i.e. 0.6-mg dose increase per week. During the treatment period, he was maintained on low-calorie diet, which was not exceeded 1,500 calories/day. During the treatment period, he was on the mild exercise of walking 45 min three times per week. His initial anthropometric measurements include a weight of 118 kg, height 171 cm, and body mass index 40.4. **Conclusion:** Short-term (05 weeks) monotherapy with Liraglutide with restricted-calorie diet and mild exercise significantly reduces the weight by 13.55%.

Keywords: Glucagon-like peptide-1, Liraglutide, obesity, weight loss

Background

Liraglutide has a dose-dependent dual beneficial effect. It improves glucose homeostasis and reduces body weight. Antidiabetic therapy is approved at doses up to 1.8 mg,[1,2] whereas higher doses are required for maximum weight reduction.[3,4] Liraglutide 3 mg led to decreases in body weight of >5% to as much as 15%[5] and was recently approved for weight management in many countries. Exposure to higher doses was not linked with deterioration in safety when compared with lower doses but to a potential higher frequency of gastrointestinal side effects.[6] Liraglutide at doses up to 1.8 mg once daily (Victoza®, Novo Nordisk, Bagsvaerd, Denmark) has been licensed for glycemic control in type 2 diabetes (T2D) since 2009. More recently, Liraglutide 3.0 mg (Saxenda®; Novo Nordisk), as an adjunct to a reduced® calorie diet and increased physical activity, has been approved for weight management in the United States, European Union, and elsewhere.

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Access this article online

Quick Response Code:

Website: www.jfmpc.com

DOI: 10.4103/jfmpc.jfmpc_213_19

Treatment with Liraglutide 3.0 mg contributes to improved cardiometabolic parameters and health-related quality of life scores.[7,8] Our aim of this case study was to evaluate the short-term (05 weeks) monotherapy and effects of Liraglutide on weight loss in adult person.

Case Presentation

A 35-year-old male not having any medical illness was presented for medical weight-loss management. He was taking Liraglutide (Saxenda) by SC solution multidose pen 0.6 mg in the first week, 1.2 mg in the second week, 1.8 mg in the third week, 2.4 mg in the fourth week, and 3.0 mg in the fifth week, i.e. 0.6 mg dose increase per week. During the treatment period, he was maintained on low-calorie diet, which was not exceeded 1,500 calories/day. During the treatment period, he was on the mild exercise of walking 45 min three times per week. His initial anthropometric measurements include a weight of 118 kg, height 171 cm, and body mass index (BMI) 40.4.

After 45 days, the weight of the patient was 102 kg and BMI was 34.9 [Figure 1 and Table 1]. There was 13.55% weight loss

How to cite this article: Almarshad F. Short-term monotherapy with Liraglutide for weight management: A case study. J Family Med Prim Care 2019;8:1804-6.

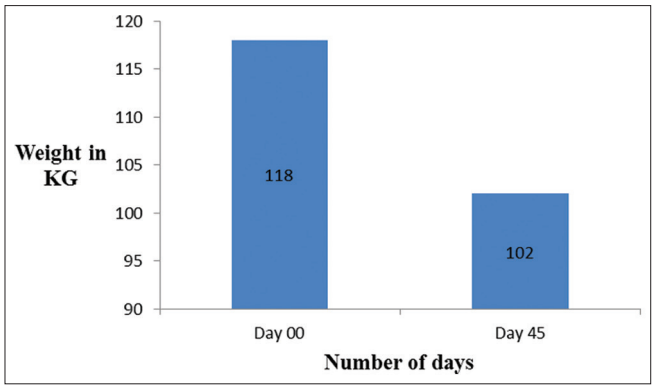

Figure 1: Weight reduction

occurs within 45 days with Liraglutide, low-calorie diet, and mild exercise. There was no remarkable blood analysis, urine analysis, lipid profile, and liver function tests were found.

Discussion and Conclusion

A 5%–10% reduction in body weight in overweight and obese individuals improves several risk factors for cardiovascular disease (CVD), including elevated blood glucose, blood pressure, and plasma triglyceride concentrations.[9-11] Liraglutide, with low-calorie diet and mild exercise, maintained weight loss achieved and induced further weight loss over 56 weeks. Improvements in some CVD risk factors were also observed. Liraglutide 3 mg/day was useful for improving the maintenance of lost weight. Liraglutide, compared with placebo, improved weight maintenance and induced additional reductions in CVD risk factors including waist circumference.[12] In two double-blind studies, adding Liraglutide to lifestyle counseling for 1 year resulted in an average 8.9- to 13.3-lb (4–6 kg) greater weight loss in >3,000 obese or overweight patients with hyperlipidemia, hypertension, or diabetes.[13-16]

Our objective was to evaluate the effect of short-term use (05 weeks) of Liraglutide in weight loss. The above case revealed that the short-term use of Liraglutide up to 3-mg dose started with 0.6 mg/day and increased by 0.6 mg in every week up to 3 mg with restricted-calorie diet and mild exercise results in 13.55% weight loss.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Acknowledgements

The authors are thankful to Shaqra University, Ministry of Education, Kingdom of Saudi Arabia, for providing a platform to encourage research and developments among the students, staff, and society.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Table 1: Initial and after treatment laboratory parameters of the patient

Parameter	Initial	After treatment	Reference value
CBC			
WBC	6.62×10^9/L	6.2×10^9/L	$3.5\text{-}12.0\times10^9$/L
Platelets	296×10^9/L	300×10^9/L	$150\text{-}400\times10^9$/L
Hb (g/dL)	16.1	15.8	14-18
Fasting glucose (mmol/L)	5.5	5.1	3.9-6.1
Urea (mmol/L)	4.5	5.5	2.9-8.2
Creatinine (μmol/L)	65	67	50-110
Uric acid (μmol/L)	341	339	120-420
Lipid Profile			
Cholesterol (mmol/L)	5.2	5.1	<5.2
Triglycerides (mmol/L)	1.1	1	0.45-1.71
Sodium (mmol/L)	133	138	135-145
Potassium (mmol/L)	4.5	3.8	3.5-5.1
Chloride (mmol/L)	101	105	96-106
Liver Function Tests			
Total bilirubin (μmol/L)	26	20	3-22
AST (IU/L)	36	36	5-40
ALT (IU/L)	51	40	5-40
ALP (IU/L)	60	65	35-130

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