

A Cost of Control Analysis of Once-weekly Subcutaneous Semaglutide Versus Dulaglutide for Bringing Patients to Treatment Targets in China

Ruan Z¹, Gu Z², Shen Y³, Chen L²

1. Institute of Chinese Medical Sciences, University of Macau, Macao SAR,China

2. The Research Center of National Drug Policy & Ecosystem, China Pharmaceutical University, Nanjing, China

3. Novo Nordisk (China) Pharmaceuticals Co., Ltd., Beijing, China

INTRODUCTION

- Once-weekly (OW) subcutaneous semaglutide is an injectable glucagon-like peptide-1 (GLP-1) analogue, the efficacy of which has been shown in the Semaglutide Unabated Sustainability in Treatment of Type 2 Diabetes (SUSTAIN) trial program that comprises ten reported phase 3 global clinical trials¹;
- In the SUSTAIN 7 post-hoc analysis, OW semaglutide 0.5mg showed similar reduction in glycated hemoglobin (HbA_{1c}) and body weight in people with type 2 diabetes mellitus (T2DM) comparing dulaglutide 1.5mg².

OBJECTIVE

- To evaluate the absolute annual cost and relative costs of bringing one patient with T2DM to various clinically relevant treatment targets suggested, covering glycemic control, weight loss, and hypoglycemia incidence, with OW semaglutide 0.5mg relative to dulaglutide 1.5mg, based on the findings of the SUSTAIN 7 randomized controlled trial³.

METHODS

- A cost of control model was developed in Microsoft Excel 2013 to evaluate the absolute and relative costs of OW semaglutide 0.5mg and dulaglutide 1.5mg to bring a single patient to each of the prespecified composite and single endpoints in SUSTAIN 7, covering glycemic targets, body weight control, and hypoglycemia event* outcomes: (1) HbA_{1c} ≤6.5%, (2) HbA_{1c} <7.0%, (3) HbA_{1c} <7.0% without hypoglycemia and no weight gain, (4) weight loss ≥5%, (5) weight loss ≥10% and (6) ≥1.0% HbA_{1c} reduction and ≥3.0% weight loss. The proportions of patients achieving these treatment targets were taken from SUSTAIN 7.
- The analysis was conducted from the perspective of Chinese healthcare system for 1 year, capturing expenditure on diabetes medication. No discounting was applied as no future costs were captured beyond the 1-year time horizon. The annual cost included medication cost and needle cost (the bidding prices are confidential).
- The numbers needed to treat (NNT) for one patient to reach each endpoint was calculated in absolute terms for each comparator(i.e., the reciprocal of the proportion of patients reaching each target). Absolute annual costs were calculated as the annual cost per patient of each medication, expressed in 2020 RMB (CNY), multiplied by the NNT. Relative cost of control was calculated by referencing the cost of control of dulaglutide to once-weekly semaglutide.

*: severe or blood glucose-confirmed symptomatic hypoglycaemia event

RESULTS

- The numbers needed to treat of OW semaglutide 0.5mg to bring at least one patient to reach each treatment target were lower than dulaglutide 1.5mg (Figure 1)
- The absolute costs of control with OW semaglutide 0.5mg showed lower for all modeled endpoints than dulaglutide 1.5mg (Table 2).
- For each patient achieving an endpoint of HbA_{1c} ≤6.5%, HbA_{1c} <7%, HbA_{1c} <7.0% without hypoglycemia and no weight gain, weight loss ≥5%, weight loss ≥10%, ≥1.0% HbA_{1c} reduction and ≥3.0% weight loss, the cost would be 32%, 28%, 40%, 86%, 121% and 92% larger with dulaglutide 1.5mg than with OW semaglutide 0.5mg, respectively (Figure 2).

Table 1. Proportion of patients reaching target with OW semaglutide 0.5 mg and dulaglutide 1.5 mg

Proportion of patients achieving treatment target	HbA _{1c} ≤6.5%	HbA _{1c} <7.0%	HbA _{1c} <7.0% without hypoglycemia and no weight gain	weight loss ≥5%	weight loss ≥10%	≥1.0% HbA _{1c} reduction and ≥3.0% weight loss
OW semaglutide 0.5 mg	49%	68%	64%	44%	14%	53%
Dulaglutide 1.5 mg	47%	67%	58%	30%	8%	35%

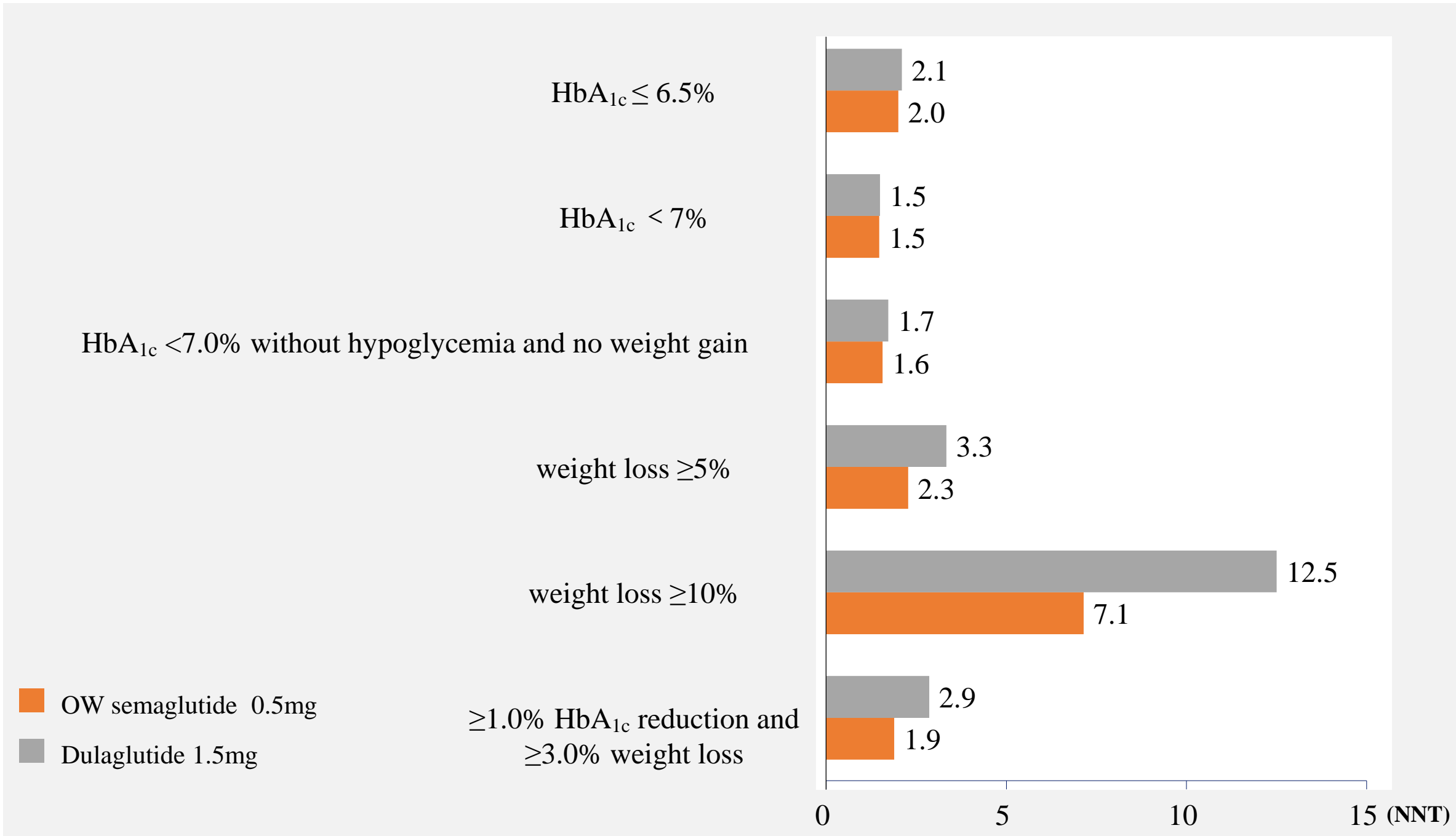


Figure 1. Numbers needed to treat to bring one patient to target with OW semaglutide 0.5 mg and dulaglutide 1.5 mg

Table 2. Absolute cost of control outcomes with OW semaglutide 0.5mg and dulaglutide 1.5mg

Absolute annual cost of control (CNY)	HbA _{1c} ≤6.5%	HbA _{1c} <7.0%	HbA _{1c} <7.0% without hypoglycemia and no weight gain	weight loss ≥5%	weight loss ≥10%	≥1.0% HbA _{1c} reduction and ≥3.0% weight loss
OW semaglutide 0.5 mg	12,536	9,033	9,598	13,960	43,875	11,590
Dulaglutide 1.5 mg	16,530	11,596	13,395	25,898	97,116	22,198

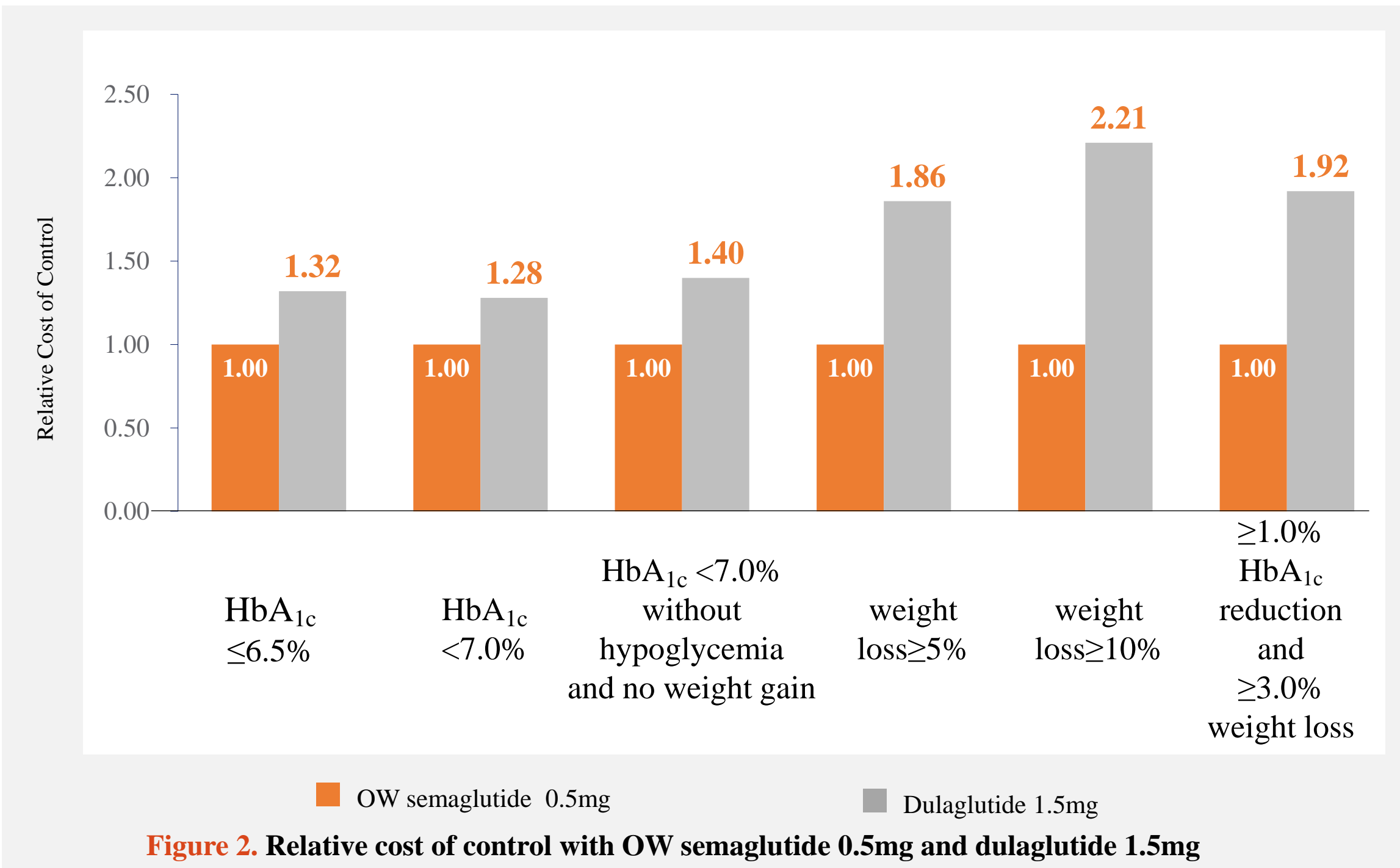


Figure 2. Relative cost of control with OW semaglutide 0.5mg and dulaglutide 1.5mg

CONCLUSIONS

- The cost in a patient reaching these presented efficacy targets is lower for semaglutide 0.5 mg vs dulaglutide 1.5 mg.
- OW semaglutide 0.5mg provides better value for money than dulaglutide 1.5mg for the treatment of people with T2DM in China.

Reference:
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