ORIGINAL ARTICLE

Patient preferences for treatment in type 2 diabetes: the Italian discrete-choice experiment analysis

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Abstract

Aims Several drug classes are now available to achieve a satisfactory metabolic control in patients with type 2 diabetes (T2DM), but patients' preferences may differ.

Methods In a discrete-choice experiment, we tested T2DM patients' preferences for recent antidiabetic drugs, in the event that their treatment might require intensification. The following attributes were considered: (a) route of administration; (b) type of delivery; (c) timing; (d) risk of adverse events; (e) effects on body weight. Twenty-two possible scenarios were built, transferred into 192 paired choices and proposed to 491 cases naïve to injectable treatments and 171 treated by GLP-1 receptor agonists (GLP-1RAs). Analyses were performed by descriptive statistics and random effects logit regression model.

Results Preferences according to dosing frequency, risk of nausea and urinary tract infections (UTIs) were similar across groups, age, sex and BMI. Administration route and delivery type accounted for 1/3 of relative importance; the risk of UTIs, nausea and dosing frequency for $\approx 20\%$ each, and weight loss for only 6%. Two significant interactions emerged ($p < 0.01$): type of delivery × group, and weight change × BMI class. Irrespective of previous treatment, the three preferred choices were injectable, coupled with weekly dosing and a ready-to-use device (first two choices). In a regression model, being naïve or non-naïve changed the ranking of preferences ($p < 0.001$), and the order was systematically shifted towards injectable medications in non-naïve subjects.

Conclusion Easy-to-deliver, injectable treatment is preferred in T2DM, independently of treatment history, and previous experience with GLP-1RAs strengthens patients' willingness to accept injectable drugs.

Keywords Adverse events · Dose frequency · Glucagon-like peptide-1 receptor agonists · Injectable drugs · Nausea · Oral treatment · Route of delivery · Sodium–glucose co-transporter 2 inhibitors · Urogenital-tract infections · Weight loss

Introduction

Type 2 diabetes mellitus (T2DM) is a challenge for National Healthcare systems. The worldwide epidemics of obesity and the progressive increase in life expectancy are both contributing to raise the prevalence of disease in the community. The direct costs of the disease have increased as

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well [1], aggravated by the several comorbidities involving most organs and tissues, generally associated with poor metabolic control [2]. Intensive treatment with glucose-lowering drugs is mandatory at all stages of the disease, and new drug classes have recently been added to metformin and sulfonylureas in use since the early 1960s. Treatment results in poly-therapy, increasing the risk of reduced compliance and non-adherence.

Treatment targets and drug use are dictated by clinical practice guidelines, based on patients' frailty, safety and effectiveness of individual drug classes, and by the cost of treatment [3], with authorities regulating or monitoring the use of more expensive drugs in an attempt to control total expenditure in universalistic healthcare systems [4].

Patients' preferences are not adequately considered by diabetologists, more concerned with the need to prescribe