

Could a weight management pathway for people treated with GLP-1 receptor agonists improve self-management and metabolic outcomes?

Juliet Finnie, Nicola Middleton

Glucagon-like peptide-1 (GLP-1) receptor agonist therapies promote weight loss while treating glycaemia. However, along with other newer therapies, they are among the more expensive treatments available for type 2 diabetes, and it is well known that managing increasing numbers of people with type 2 diabetes presents a challenge within the financial constraints of the NHS. In this article, the authors describe a patient pathway that, coupled with group education, was used to target add-on GLP-1 receptor agonist therapy towards motivated individuals and to promote lifestyle changes through improved self-management behaviours. The results revealed that there were parallel increases, relative to data from a previous audit, in the proportions of people who reduced their weight and their HbA_{1c} level to the extent recommended by NICE for the continuation of GLP-1 receptor agonist therapy. While a comparison of this nature does not allow cause-and-effect inferences to be drawn, the results do indicate that this method could potentially be used more widely to improve outcomes and cost-effectiveness for people treated with GLP-1 receptor agonists and provide a basis for future research.

Type 2 diabetes accounts for approximately 90% of diagnosed cases of diabetes in the UK (Diabetes UK, 2012), the total number of which passed 3 million earlier this year and continues to rise (Diabetes UK, 2013). Furthermore, a recent study has shown that 50% of those people with type 2 diabetes are obese (Haslam, 2011). This means there are probably in excess of 1.3 million people in the UK diagnosed with type 2 diabetes and obesity – conditions described, when occurring in combination, as “diabesity”.

Weight loss is considered to be the primary nutritional strategy for managing glucose control in type 2 diabetes for people who are overweight (Diabetes UK, 2011). The past decade has seen the introduction of a number of drug therapies that aim to control blood glucose by treating the complex glucose-regulating mechanisms and promoting weight loss. Newer therapies require careful consideration by clinicians and formulary decision-makers with regard to suitability within the treatment pathway and the decision of whether the additional

acquisition cost, relative to older glucose-lowering therapies, is justified.

In this article, we explore the question of whether a weight management pathway for people with type 2 diabetes meeting NICE (2009; 2010; 2012) guidance criteria for treatment with glucagon-like peptide-1 (GLP-1) receptor agonists could improve self-management behaviours and overall outcomes.

Rationale and guiding principles for change

The UK is faced with not only a growing number of people with diabetes, as mentioned above, but also a limited capacity of healthcare resources (NHS Diabetes, 2010). Thus, the economic case for any new diabetes treatment must be carefully considered. Treatment with GLP-1 receptor agonists has been shown to reduce HbA_{1c} and promote weight loss, as reflected in clinical guidelines and technology appraisals (NICE, 2009; 2010; 2012). Such documentation from NICE endorses the cost-effectiveness of these agents in appropriate

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Article points

1. The authors explore the question of whether a weight management pathway for people with type 2 diabetes meeting NICE guidance criteria for treatment with glucagon-like peptide-1 receptor agonists could improve self-management behaviours and overall outcomes.
2. The pathway incorporated a four-part structured education programme to provide individuals with the necessary information to make appropriate lifestyle choices.
3. The authors argue that their approach, or a similar pathway including structured education, could be considered for implementation in other areas.

Key words

- Care pathways
- Empowerment
- Structured education
- Weight management

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circumstances. As such, the initiation and continuation of treatment require certain criteria to be met (described later).

Results from an audit that took place in 2009 in our NHS trust led to recommendations that a pathway of care be established for add-on GLP-1 receptor agonist therapy to target and support

motivated individuals, with the goal of improving overall therapeutic outcomes.

Innovative ways of working, such as a new clinical pathway, have the potential to generate efficiencies for organisations, and it is important that they are underpinned by audit and research (Royal College of Nursing, 2010). Therefore, following the above recommendation, a pilot study was conducted to trial and collect data on a new patient pathway (Figure 1). The aims of implementing the pathway, and associated means of support, were as follows:

- To incorporate an evidence-based approach to structured education.
- To promote self-management.
- To empower individuals to improve achievement of therapeutic targets and promote the likelihood of successful outcomes.
- To enhance adherence to NICE (2009; 2010; 2012) guidance regarding the use of GLP-1 receptor agonists.

We took an approach that would use motivational interviewing techniques to engage individuals and would work to the philosophy of “no decision about me, without me”.

The pathway was designed to meet components of the NICE (2011) Quality Standard on diabetes in adults, including structured education, lifestyle modification and the agreement of personal targets.

Considering these intended qualities of the pathway further, it is well established that structured education is a cornerstone of the therapeutic package for people with type 2 diabetes, and should be available at diagnosis and then as required (Department of Health, 2003; NICE, 2011). Such education should promote self-care and empowerment, rather than being delivered passively in a manner likely to lead to dependence (Funnell, 2004). There is much evidence to suggest that self-management improves psychological health, empowers people and enhances self-efficacy (Anderson, 2012). Various healthcare roles can help support this in the context of diabetes.

Evolving government strategy has reflected a growing acknowledgement of the importance of the nurse’s role in promoting lifestyle choices and self-care (Department of Health, 2006). Additionally, there are recommendations for specialist dietitians to take a major role in nutritional care (Diabetes UK, 2011). Various other groups of healthcare professionals, of

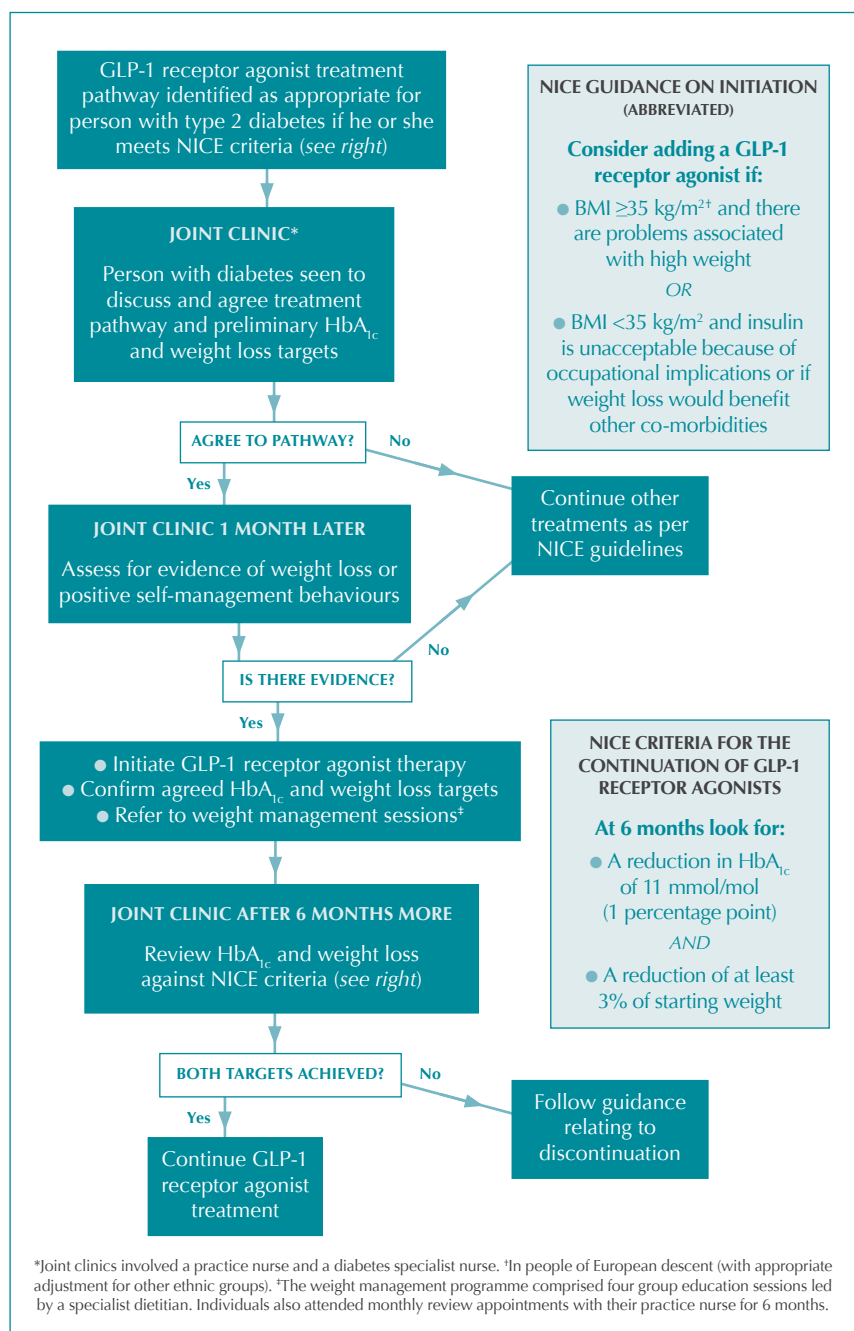


Figure 1. The treatment pathway for introduction and continuation of glucagon-like peptide-1 (GLP-1) receptor agonists in the third-line setting in type 2 diabetes in the authors’ locality (NICE, 2009; 2010; 2012).

course, have a role to play, but the importance of self-management should not be neglected. Indeed, it should be an ongoing and integral part of diabetes care, including its pharmacological management.

Implementing the pathway

Agreement to pilot the pathway for a period of 12 months was sought from our colleagues in primary care, with a view to introducing it as a management approach across the clinical commissioning group, if results were persuasive.

Suitable individuals were identified in primary care as those meeting NICE (2009; 2010; 2012) criteria for the initiation of add-on GLP-1 receptor agonist treatment in the third-line setting (*Figure 1*). Individuals attended an appointment with their practice nurse and diabetes specialist nurse to discuss the importance of lifestyle modification and to agree targets for change to strive towards during the next month. After 1 month, targets were reviewed and in individuals displaying motivation to change (evidence of weight loss or positive self-management behaviours [i.e. self-reported positive lifestyle changes during the month]), add-on GLP-1 receptor agonist treatment was initiated.

During the first 6 months of treatment, people for whom the treatment was initiated attended monthly review appointments with their practice nurse and four group education sessions led by a specialist dietician. The curriculum included calorie awareness, understanding of food groups, peer review of food diaries, the behaviour-change cycle and understanding of GLP-1 receptor agonist action. The philosophy guiding the group education sessions was to take a patient-centred approach and to encourage active goal-setting.

People entering the pathway kept their own record sheet for weight, HbA_{1c} and goal-setting throughout, in order to facilitate shared decision-making.

Individuals were weighed at baseline during their first appointment at their practice, and then on a monthly basis during practice nurse follow-up and during group education sessions. HbA_{1c} data were collected at baseline and 6 months (or, in some instances, later) after starting the pathway. Results were compared with those of a previous audit of HbA_{1c} and weight loss data in individuals starting GLP-1 receptor agonist treatment in the same geographical area, but without this treatment pathway.

Results

Twenty-eight people started the pathway and attended at least one session and 23 people completed the pathway to 7 months (1 month from the first to the second joint clinic and a further 6 months to the third joint clinic). Data from these are presented below.

HbA_{1c}

HbA_{1c} data at 0 and 7 months were available for 22 individuals. Of these, 82% (*n*=18) experienced a reduction in HbA_{1c}. The average reduction in HbA_{1c} was 18.6 mmol/mol (1.7 percentage points), with a standard deviation (SD) of 10.5 mmol/mol (1.0 percentage point). Fifty-five per cent (*n*=12) of individuals achieved the NICE (2009; 2010; 2012) criterion of a reduction of at least 11 mmol/mol (1 percentage point) in HbA_{1c} after 6 months of treatment.

Weight loss

Weight data at 0 and 7 months were available for 16 individuals. Of these, 81% (*n*=13) lost weight. The average weight loss was 6.2% (SD, 5.1%) of body weight. Seventy-five per cent of individuals (*n*=12) achieved the NICE (2009; 2010; 2012) criterion of at least 3% body weight loss after 6 months of treatment.

Combined criteria

In some individuals we only had HbA_{1c} data and in others we only had weight data, and thus the proportion achieving both targets could not be meaningfully analysed.

Comparative data

An audit in 2009 within the same NHS trust, which pre-dated the pilot of the patient pathway described here, provides the best available comparative data. At that time, people with diabetes were not selected for add-on GLP-1 receptor agonist treatment on the basis of their motivation to make lifestyle changes. They did not attend group structured education within the first 6 months of their treatment change.

The 2009 data showed that 26% met the NICE criterion for HbA_{1c} reduction (*Figure 2*) and 48% of individuals met the criterion for weight loss (*Figure 3*). As can be observed in *Figures 2* and *3*, a marked improvement in outcomes was seen after implementation of the patient pathway and structured education sessions described above.

Page points

1. HbA_{1c} data at 0 and 7 months were available for 22 individuals. Of these, 82% (*n*=18) experienced a reduction in HbA_{1c}.
2. Weight data at 0 and 7 months were available for 16 individuals. Of these, 81% (*n*=13) lost weight.

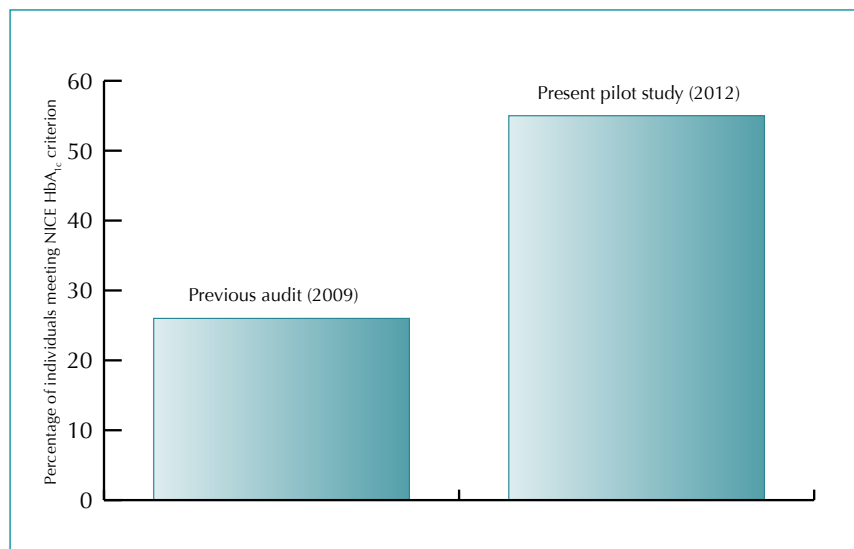


Figure 2. In 2009, 26% of individuals in an audit in the authors' locality met the NICE (2009; 2010; 2012) criterion of a reduction in HbA_{1c} of 11 mmol/mol (1 percentage point) after 6 months of add-on glucagon-like peptide-1 receptor agonist therapy in the third-line setting. Following the implementation of the pathway described in this article, the figure rose to 55%.

Since this was a *post hoc* comparison, the data are presented numerically only (i.e. without statistical hypothesis testing).

Discussion

It is important that any therapies and education programmes designed to help deliver improvements in glycaemic control or to support weight loss (which can itself help improve glycaemic control in type 2 diabetes

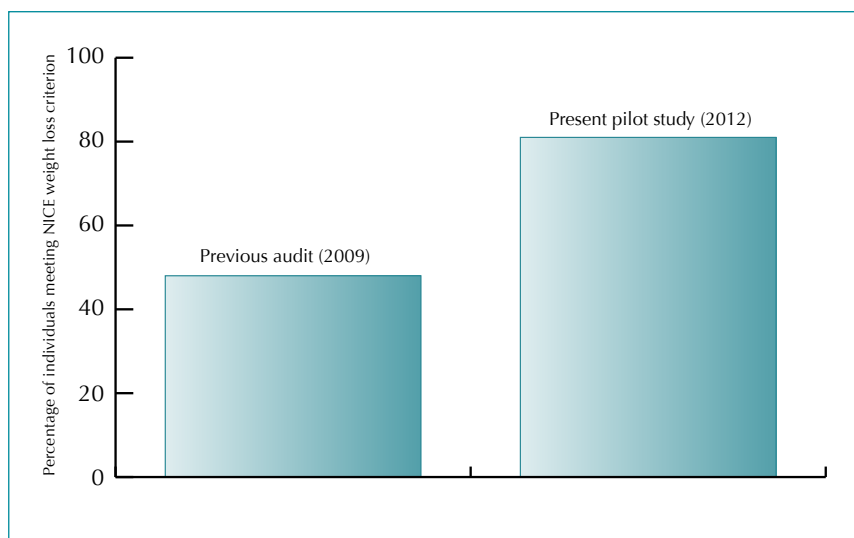


Figure 3. In 2009, 48% of individuals in an audit in the authors' locality met the NICE (2009; 2010; 2012) criterion of 3% loss of body weight after 6 months of add-on glucagon-like peptide-1 receptor agonist therapy in the third-line setting. Following the implementation of the pathway described in this article, the figure rose to 81%.

[NICE, 2008; Diabetes UK, 2011]) are evidence-based and cost-effective.

An audit carried out in the same NHS trust prior to this pathway being introduced demonstrated that a smaller proportion of people with diabetes initiated on add-on GLP-1 receptor agonist treatment met NICE (2009; 2010; 2012) criteria for continuing the therapy at 6 months. Based on the improved results for HbA_{1c} reduction and weight loss noted in our pilot study, we tentatively suggest that the use of a structured pathway and patient-centred group education programme can be effective as a method of improving outcomes in people taking GLP-1 receptor agonists and increasing the proportion of individuals who meet individual components of the NICE (2009; 2010; 2012) criteria to continue treatment after 6 months.

Contributors to success

On reflecting on the study, we believe that the following elements of the approach are likely to be potential contributors to such a success.

Targeting treatment to motivated patients

As described earlier, GLP-1 receptor agonists can improve glycaemic control and promote weight loss in people with type 2 diabetes. Dietary and other lifestyle changes can also have a clinically significant effect on both weight and glycaemia (Diabetes UK, 2011). As such, particularly successful outcomes might intuitively be expected when using GLP-1 receptor agonists in individuals who are more willing to make lifestyle changes.

Use of structured education

Structured education is recommended by NICE as a means of providing people with diabetes with information needed to manage their own condition, and it has also been recognised as an effective means of promoting a partnership approach between healthcare professionals and patients (NICE, 2008; 2009).

The patient pathway reported here incorporated a four-part structured education programme to provide individuals with the necessary information to make appropriate lifestyle choices. Dietary information discussed was evidence-based in accordance with current nutritional guidelines (Diabetes UK, 2011).

In addition, the approach was one of allowing individuals time to discuss information, review their own dietary patterns, ask questions and set their

own goals. Thus, the structured education promoted patient empowerment and systematic processing of information, which has previously been linked to improved behaviour change (Anderson et al, 1995).

Feedback following the group sessions demonstrated patient-perceived value of the above approach. When asked what the most useful part of the sessions was, responses included:

“Group discussions, individual stories and ideas.”

“It helps to talk to others and their experience.”

“Listening to other people as well as to the dietitian.”

Autonomous decision-making

The promotion among patients of autonomous decision-making and self-management has previously been linked to improved glycaemic control (Williams et al 1998). Our approach encouraged self-management through the use of hand-held records that people entering the pathway could use to monitor their weight and HbA_{1c} level and to set appropriate goals.

Regular support

While autonomous decision-making was promoted throughout, ongoing support was available to facilitate and encourage appropriate changes. Individuals were invited to monthly reviews with their practice nurse to discuss concerns, which supplemented the group education sessions. Throughout the pilot, a partnership approach between patients and healthcare professionals was encouraged.

Limitations of the research

There are two particular limitations of the research that are important to note. The first is that we did not have controlled comparative data. The second is that our overall numbers were small. As such, caution must be exercised in interpreting the comparisons made.

Nevertheless, we feel that our results are useful not only in meeting audit needs within our locality and, more widely, in guiding future pilots and other research. In particular, with sufficient resources it would be beneficial to build on this research with a larger sample size, an exploration of people meeting both targets, and a formally controlled comparison – ideally via randomisation – capturing, among other outcomes, data for health-economic modelling.

Implications for future practice

We believe that the approaches discussed above are likely to have enhanced the positive outcomes for people initiated on add-on GLP-1 receptor agonist treatment. In the locality where the pathway was implemented, the evidence gathered was considered to be sufficient to recommend its continuation. We feel that this particular approach, or a similar pathway including structured education, could be considered for implementation in other areas.

Feedback from people entering the pilot indicated an interest in ongoing support. Future studies could consider how best to achieve this. The use of ongoing structured education, for example, may provide a cost-effective approach. Further data collection will be advantageous in order to determine the long-term benefits of this existing pathway and how best to maintain outcomes. ■

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