ADHERENCE TO NICE GUIDANCE FOR INITIATING GLP-1 MIMETICS AMONG PATIENTS WITH TYPE 2 DIABETES IN PRIMARY CARE IN ENGLAND AND WALES - AN EVALUATION USING THE CLINICAL PRACTICE RESEARCH DATALINK (CPRD)

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BACKGROUND

• Control of blood glucose levels remains the cornerstone of managing Type 2 diabetes mellitus (T2DM).
• Clinical trials have demonstrated the efficacy of glucagon-like peptide-1 (GLP-1) mimetics in lowering blood glucose and resulting in meaningful weight loss. [1]
• The UK National Institute of Health and Care Excellence (NICE) has published guidelines for prescribing GLP-1 therapies for patients with T2DM. [2-4]
• Such national guidelines/guidance offer best practice advice on how decisions about prescribed medicines should be made, including criteria for initiating treatment.
• Clinicians adherence to NICE prescribing guidelines are likely to result in greater clinical benefit to patients, and efficient use of resources in the NHS.

OBJECTIVES

• To assess clinician’s adherence to NICE guidelines/guidance for initiating GLP-1s (exenatide, liraglutide and exenatide prolonged release [PR]) among patients with T2DM, following publication of the relevant recommendations.

METHODS

Design

A retrospective cohort study of T2DM patients in England and Wales initiating GLP-1 therapies for the first time. NICE GLP-1 recommendations are not formally followed in Scotland or Northern Ireland.

Study Period

• Prescribing of GLP-1, assessed on or after publication of the relevant NICE guidance or guidelines.
• Exenatide prescribing was assessed from 1 May 2009, liraglutide from 1 Oct 2010, and exenatide-PR from 1 Feb 2012. All therapies were assessed up to 30 Apr 2014.

Data Sources

• T2DM patients identified using primary care records in the Clinical Practice Research Datalink (CPRD).
• CPRD contains anonymized longitudinal data on clinical care including treatment. It covers ~9.2% of the UK population.
• Data from 492 practices in England and Wales were included.

Eligibility Criteria

• 7,133 patients ≥40 years of age at GLP-1 initiation with ≥12 months of CPRD history prior to first GLP-1 prescription.
• Patients with more than one type 1 GLP-1 recorded at initiation were excluded as were patients with record of pregnancy documented up to 12 months prior to GLP-1 initiation.

Measures

• Treatment with GLP-1 mimetic categorized as monotherapy, dual, triple or other therapies.
• Monotherapy and combination therapy were defined as the number of drug prescriptions within a 30-day interval.
• Other therapies included GLP-1 as part of quadruple combination therapy, or any use with insulin.
• HbA1c and body mass index [BMI] up to 6 months prior to initiating GLP-1.

Outcomes of Interest

• The proportion of patients initiating GLP-1 as part of NICE recommended dual or triple therapy.

• Liraglutide or exenatide PR initiated as dual therapy with metformin (MET) or sulphonylurea [SU] (where there is intolerance/contraindication to one of these therapies and other therapies [OPI-4 inhibitors or thiazolidinediones [TZDs] are contraindicated or not tolerated).

• Upon study initiation, data on treatment intolerance and/or contraindications were not widely available. Therefore, this study focused only on T2DM drug regimen prescribed with GLP-1 that were recommended by NICE.

• Data on patients initiating GLP-1 as part of NICE recommended dual or triple therapy.

Statistical Analysis

• Descriptive statistics, including mean, standard deviation [SD], median, interquartile range [IQR] and percentages were calculated.

RESULTS

Table 1. Select characteristics of T2DM patients prior to initiation of GLP-1

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Liraglutide</th>
<th>Exenatide</th>
<th>Exenatide-PR</th>
<th>All-GLP1</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI ≥35kg/m²</td>
<td>948 (27.6)</td>
<td>744 (22.2)</td>
<td>97 (28.0)</td>
<td>1789 (25.1)</td>
</tr>
<tr>
<td>Diabetes duration mean [SD]</td>
<td>9.5 (9.5)</td>
<td>9.6 (9.7)</td>
<td>9.3 (9.6)</td>
<td>9.5 (9.8)</td>
</tr>
<tr>
<td>BMI and HbA1c (age ≤6 months prior to initiation)</td>
<td>300 (51.0)</td>
<td>317 (49.8)</td>
<td>29 (49.1)</td>
<td>646 (50.3)</td>
</tr>
</tbody>
</table>

Table 2. Proportion initiating GLP-1 as NICE recommended triple therapy regimen and recommended NICE BMI and HbA1c criteria

<table>
<thead>
<tr>
<th>NICE criteria for initiation of triple therapy</th>
<th>Liraglutide</th>
<th>Exenatide</th>
<th>Exenatide-PR</th>
<th>All-GLP1</th>
</tr>
</thead>
<tbody>
<tr>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
<td></td>
</tr>
<tr>
<td>GLP-1 initiated on triple therapy</td>
<td>58.9 (40.0)</td>
<td>58.9 (40.0)</td>
<td>58.9 (40.0)</td>
<td>58.9 (40.0)</td>
</tr>
<tr>
<td>HbA1c ≥7.5%</td>
<td>58.9 (40.0)</td>
<td>58.9 (40.0)</td>
<td>58.9 (40.0)</td>
<td>58.9 (40.0)</td>
</tr>
<tr>
<td>BMI measured ≤3 months prior to GLP-1 initiation</td>
<td>58.9 (40.0)</td>
<td>58.9 (40.0)</td>
<td>58.9 (40.0)</td>
<td>58.9 (40.0)</td>
</tr>
<tr>
<td>BMI (≥35kg/m²)</td>
<td>58.9 (40.0)</td>
<td>58.9 (40.0)</td>
<td>58.9 (40.0)</td>
<td>58.9 (40.0)</td>
</tr>
</tbody>
</table>

Proportion fulfilling NICE criteria (HbA1c ≥7.5% & BMI ≥35kg/m²)

| Proportion fulfilling NICE criteria | 309 (51.0) | 317 (49.8) | 29 (49.1) | 646 (50.3) |

LIMITATIONS

• Treatment categories were based on prescribed GLP-1 drug classes only.
• Monotherapy and combination therapy were defined as the number of drug prescriptions within a 30-day interval.
• Other therapies included GLP-1 as part of quadruple combination therapy, or any use with insulin.
• HbA1c and body mass index [BMI] up to 6 months prior to initiating GLP-1.

CONCLUSIONS

• The low level of adherence (~25%) to NICE prescribing recommendations for initiating GLP-1 with other T2DM glucose lowering therapies is concerning.

• Greater efforts are needed to ensure HbA1c and BMI are routinely measured prior to initiating GLP-1.

• Key priorities highlighted by the NICE guidelines need to be reinforced to improve adherence to NICE recommendations.

• Further research is needed to identify possible causes of non-adherence to NICE treatment guidelines.