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**Saxagliptin Improves Glycemic Control by Modulating Postprandial Glucagon and C-Peptide Levels in Chinese Patients with Type 2 Diabetes**

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This document provides an abstract on the effects of saxagliptin on glycemic control, specifically focusing on its impact on postprandial glucagon and C-peptide levels in Chinese patients with type 2 diabetes.
Guidelines and Notes

Abstract submission for the World Diabetes Congress Melbourne 2013 opens on **1 February 2013** and closes on **22 April 2013 17.00 (GMT)**.

Abstracts for the congress can be submitted for five of the streams:

- Basic and Clinical Science (BCS)
- Diabetes in Indigenous Peoples (DIP)
- Education and Integrated Care (EIC)
- Living with Diabetes (LWD)
- Public Health and Epidemiology (PHE)

Submitted abstracts will be peer-reviewed and, if accepted, be selected for one of three categories below:

- Oral Presentation: Some accepted abstracts will be chosen for oral presentations enabling authors to communicate their findings to a global audience.
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- Poster Display: A collection of accepted abstracts will be displayed as posters.

The title is limited to **120 characters excluding spaces** and should be brief and relevant. Special characters should NOT be used in your title but spelt out instead (e.g. β is beta; ω is omega).

Abstract body:

- **Structure**: the abstract, if applicable, to include aims, methods, results and discussion/conclusion.
- **Font, size and style** will be automatically configured by the system.
- **Tables** will be accepted in the submission field and count towards the character limit. The character deduction for tables is not fixed and will be generated by the character count shown below the submission field. Graphs, figures and photographs are NOT allowed.
- **The length** of the abstract is limited to **2100 characters excluding spaces**. Only the abstract body and any inserted tables count towards the character limit. The character count displayed beneath the submission field is final and undisputable.
- Only commonly accepted **abbreviations** should be used (e.g. OGTT, IGT, ACEI). Treatment groups or drug names should NOT be abbreviated. Less widely recognized abbreviations may be used if introduced on first usage (e.g. ambulatory blood pressure monitoring, ABPM).
- Only approved and generic (non-proprietary) **drug names** should be used.
- Do NOT enter the title, authors, or grant information into the abstract text submission field and exclude any references from the abstract body.
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ABSTRACT

**Saxagliptin Improves Glycemic Control by Modulating Postprandial Glucagon and C-Peptide Levels in Chinese Patients with Type 2 Diabetes**

**Aims:** Saxagliptin has previously been shown to reduce glycated hemoglobin (HbA1c), fasting plasma glucose (FPG), and postprandial plasma glucose (PPG) in Asian patients with type 2 diabetes. To understand the physiology of this effect, indices of α and β-cell function were measured in a subpopulation of Chinese patients following a noodle mixed meal tolerance test.

**Methods:** Data from Chinese patients were pooled from two phase 3, 24-week studies of saxagliptin 5 mg/d as monotherapy (NCT00698932) and as add-on to metformin (NCT00661362). The analysis population included 214 patients who received saxagliptin 5 mg and 217 who received placebo. PPG, C-peptide, insulin, and glucagon areas under the curve (AUC, 0-180 minutes), insulinogenic index at 60 minutes and insulin sensitivity Matsuda index after a noodle meal, as well as HbA1c, FPG, and HOMA 2β, were measured.
**Results:** At 24 weeks, greater improvements in mean change from baseline for HbA1c, PPG AUC, FPG, C-peptide AUC, and insulinogenic index as well as suppression of glucagon secretion were observed with saxagliptin vs placebo (see Table). Insulin AUC, HOMA 2β, and Matsuda index were similar between the groups (see Table).

**Conclusion:** In Chinese patients with type 2 diabetes, saxagliptin used as monotherapy or as add-on to metformin enhances glycemic control by modulating α-cell function (decreased glucagon secretion) and β-cell function (increased insulin secretion [C-peptide AUC] and insulinogenic index).

### Parameters of glycemia, α and β-cell function, and insulin sensitivity

<table>
<thead>
<tr>
<th></th>
<th>Placebo*</th>
<th>Saxagliptin*</th>
<th>Difference Saxagliptin vs Placebo†</th>
<th>P-value for difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>24 weeks</td>
<td>Baseline</td>
<td>24 weeks</td>
</tr>
<tr>
<td>HbA1c, %</td>
<td>8.02 (0.06)</td>
<td>7.55 (0.08)</td>
<td>7.87 (0.06)</td>
<td>7.11 (0.07)</td>
</tr>
<tr>
<td>FPG, mmol/L</td>
<td>9.5 (0.18)</td>
<td>8.8 (0.17)</td>
<td>9.0 (0.14)</td>
<td>8.2 (0.14)</td>
</tr>
<tr>
<td>HOMA 2B, %</td>
<td>51.3 (2.0)</td>
<td>59.9 (2.3)</td>
<td>51.8 (1.8)</td>
<td>63.7 (2.1)</td>
</tr>
<tr>
<td>PPG AUC, mmol•min/L</td>
<td>2459 (40.4)</td>
<td>2254 (36.3)</td>
<td>2409 (33.0)</td>
<td>2060 (30.5)</td>
</tr>
<tr>
<td>Insulin AUC, pmol•min/L</td>
<td>34915 (1792.2)</td>
<td>34459 (1947.4)</td>
<td>35117 (3149.3)</td>
<td>34884 (1571.3)</td>
</tr>
<tr>
<td>C-peptide AUC, nmol•min/L</td>
<td>300 (8.4)</td>
<td>305 (8.8)</td>
<td>303 (7.8)</td>
<td>327 (8.2)</td>
</tr>
<tr>
<td>Glucagon AUC, pmol•min/L</td>
<td>3346 (69.1)</td>
<td>3369 (86.0)</td>
<td>3495 (80.8)</td>
<td>3142 (71.3)</td>
</tr>
<tr>
<td>Insulinogenic</td>
<td>0.18</td>
<td>0.17</td>
<td>0.27</td>
<td>0.23</td>
</tr>
<tr>
<td>index, %</td>
<td>(0.012)</td>
<td>(0.011)</td>
<td>(0.09)</td>
<td>(0.014)</td>
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<td>---------</td>
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<tr>
<td>Matsuda index, %</td>
<td>4.4 (0.23)</td>
<td>5.3 (0.27)</td>
<td>4.8 (0.20)</td>
<td>5.4 (0.26)</td>
</tr>
</tbody>
</table>

*Mean (SE).
†Mean difference (95% CI) in adjusted mean change from baseline for saxagliptin vs placebo.