VICTOZA® (liraglutide) injection, for subcutaneous use

VICTOZA® is a glucagon−like peptide−1 (GLP−1) receptor agonist indicated as an adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus (1).

1 INDICATIONS AND USAGE

VICTOZA® is contraindicated in patients with a personal or family history of medullary thyroid carcinoma or in patients with Multiple Endocrine Neoplasia syndrome type 2 (4).

VICTOZA® is contraindicated in patients with a prior serious hypersensitivity reaction to VICTOZA® or any of the product components (4).

1. Use with Medications Known to Cause Hypoglycemia

Hypoglycemia is a known adverse reaction of VICTOZA®. If immediate hypoglycemia occurs, inject 10% dextrose or equivalent. In patients with serious or prolonged hypoglycemia, consider discontinuing VICTOZA® (1.5).

2 DOSAGE AND ADMINISTRATION

2.1 Important Administration Instructions

VICTOZA® is injected subcutaneously as a continuous once-daily administration (2.1). It should be initiated as a single dose of 0.6 mg per day for one week, then increased to 1.2 mg, and if tolerated, further increased to 1.8 mg (2.2).

2.2 General Dosing and Administration

VICTOZA® should be administered at any time of day, independently of meals (2.2). It should be injected subcutaneously in the abdomen, thigh, or upper arm (2.1).

3 DOSAGE FORMS AND STRENGTHS

VICTOZA® is supplied as a single-use prefilled pen (2.2).

4 CONTRAINDICATIONS

4.1 Risk of Thyroid C-cell Tumors

Liraglutide causes thyroid C-cell tumors at clinically relevant exposures in both genders of rats and mice. It is unknown whether VICTOZA® causes thyroid C-cell tumors, including medullary thyroid carcinoma (MTC), in humans, as the human relevance of liraglutide-induced rodent thyroid C-cell tumors has not been determined (5.1, 13.1).

4.2 Never Share a VICTOZA® Pen Between Patients

Never share a VICTOZA® pen between patients, even if the needle is changed (5.3).

4.3 Immunogenicity

Immunogenicity-related events, including urticaria, were more common among VICTOZA®-treated patients (0.8%) than among comparator-treated patients (0.4%) in clinical trials (6.2).

4.4 Serious Hypoglycemia

Serious Hypoglycemia: When VICTOZA® is used with an insulin secretagogue (e.g. a sulfonylurea) or insulin, consider lowering the dose of the insulin secretagogue or insulin to reduce the risk of hypoglycemia (5.4).

5 WARNINGS AND PRECAUTIONS

5.1 Risk of Thyroid C-cell Tumors

Counsel patients regarding the potential risk of MTC, including medullary thyroid carcinoma, or in patients with multiple endocrine neoplasia type 2 (MEN 2). If a patient develops a thyroid nodule, consider thyroidectomy (5.1).

5.2 Pancreatitis

Pancreatitis: Postmarketing reports, including fatal and non-fatal hemorrhagic or necrotizing pancreatitis, have been reported with VICTOZA®. Discontinue promptly if pancreatitis is suspected. Do not restart if pancreatitis is confirmed. Consider other antidiabetic therapies in patients with a history of pancreatitis (5.2).

5.3 Never Share a VICTOZA® Pen Between Patients

Never share a VICTOZA® pen between patients, even if the needle is changed (5.3).

5.4 Use with Medications Known to Cause Hypoglycemia

Use with medications known to cause hypoglycemia (5.4).

5.5 Renal Impairment

Renal Impairment: Postmarketing, usually in association with nausea, vomiting, diarrhea, or dehydration which may sometimes require hemodialysis. Use caution when initiating or escalating doses of VICTOZA® in patients with renal impairment (5.5).

5.6 Hypersensitivity Reactions

Hypersensitivity: Postmarketing reports of serious hypersensitivity reactions, including anaphylactic reactions and angioedema. Discontinue VICTOZA® and other suspect medications and promptly seek medical advice (5.6).

5.7 Macrovascular Outcomes

Macrovascular Outcomes: There have been no studies establishing conclusive evidence of macrovascular risk reduction with VICTOZA® or any other antidiabetic drug (5.7).

6 ADVERSE REACTIONS

6.1 Clinical Trials Experience

The most common adverse reactions, reported in ≥5% of patients treated with VICTOZA® are: nausea, diarrhea, headache and vomiting (6.1).

6.2 Immunogenicity

Immunogenicity-related events, including urticaria, were more common among VICTOZA®-treated patients (0.8%) than among comparator-treated patients (0.4%) in clinical trials (6.2).

6.3 Post-Marketing Experience

To report SUSPECTED ADVERSE REACTIONS, contact Novo Nordisk Inc. at 1-877-484-2869 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

7 DRUG INTERACTIONS

VICTOZA® delays gastric emptying. May impact absorption of concomitantly administered oral medications. (7).

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy

There is no evidence of impaired fertility with VICTOZA® treatment (8.1).

8.2 Nursing Mothers

Liraglutide is excreted in human milk. A risk to the breastfeeding infant cannot be ruled out (8.3).

8.3 Use in Patients with Renal Impairment

Administer liraglutide to patients with renal impairment (8.6).

8.4 Use in Patients with Hepatic Impairment

Liraglutide causes serious hypoglycemia in patients with hepatic insufficiency (8.7).

8.5 Geriatric Use

There is no evidence of increased adverse reactions and deaths in elderly patients (8.5).

8.6 Renal Impairment

Renal Impairment: Postmarketing, usually in association with nausea, vomiting, diarrhea, or dehydration which may sometimes require hemodialysis. Use caution when initiating or escalating doses of VICTOZA® in patients with renal impairment (5.5).

8.7 Hepatic Impairment

Hepatic impairment may increase the risk of serious hypoglycemia in patients with hepatic insufficiency (8.7).

8.8 Gastroesophageal Reﬂux Disease

Gastroesophageal reﬂux disease may increase the risk of serious hypoglycemia in patients with gastroesophageal reﬂux disease (8.8).

9 EFFECTS ON LABORATORY TESTS

Laboratory tests were not affected in a long-term study in patients with type 2 diabetes mellitus (12).

10 OVERDOSE

11 DESCRIPTION

VICTOZA® is a recombinant human GLP-1 analog (11).

12 CLINICAL PHARMACOLOGY

12.1 Mechanism of Action

VICTOZA® is a GLP-1 receptor agonist (12.1).

13 NONCLINICAL TOXICOLOGY

13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

14 CLINICAL STUDIES

14.1 Monotherapy

14.2 Combination Therapy

14.3 Patients with Moderate Renal Impairment

16 HOW SUPPLIED/STORAGE AND HANDLING

16.1 How Supplied

16.2 Recommended Storage

17 PATIENT COUNSELING INFORMATION

See 17 for PATIENT COUNSELING INFORMATION and FDA-Approved Medication Guide.

Revised: 04/2016
1 INDICATIONS AND USAGE

VICTOZA® is indicated as an adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus.

1.1 Important Limitations of Use

VICTOZA® is not recommended as first-line therapy for patients who have inadequate glycemic control on diet and exercise because of the uncertain relevance of the rodent C-cell tumor findings to humans. Prescribe VICTOZA® only to patients for whom the potential benefits are considered to outweigh the potential risk [see Warnings and Precautions (5.1)].

Based on spontaneous postmarketing reports, acute pancreatitis, including fatal and non-fatal hemorrhagic or necrotizing pancreatitis has been observed in patients treated with VICTOZA®. VICTOZA® has not been studied in patients with a history of pancreatitis. It is unknown whether VICTOZA® causes thyroid C-cell tumors, including medullary thyroid carcinoma (MTC), in humans, as the human relevance of liraglutide-induced rodent thyroid C-cell tumors has not been determined.

Cases of MTC in patients treated with VICTOZA® have been reported in the postmarketing period; the data in these reports are insufficient to establish or exclude a causal relationship between MTC and VICTOZA® use in humans.

VICTOZA® is contraindicated in patients with a personal or family history of MTC or in patients with MEN 2. Counsel patients regarding the potential risk for MTC with the use of VICTOZA® and inform them of symptoms of thyroid tumors (e.g., a mass in the neck, dysphagia, dyspnea, persistent hoarseness). Routine monitoring of serum calcitonin or using thyroid ultrasound is of uncertain value for early detection of MTC in patients treated with VICTOZA® [see Contraindications (4) and Warnings and Precautions (5.1)].

2 DOSAGE AND ADMINISTRATION

2.1 Important Administration Instructions

Inspect visually prior to each injection. Only use if solution is clear, colorless, and contains no particles.

Inject VICTOZA® subcutaneously in the abdomen, thigh or upper arm. No dose adjustment is needed if changing the injection site and/or timing.

When using VICTOZA® with insulin, administer as separate injections. Never mix.

It is acceptable to inject VICTOZA® and insulin in the same body region but the injections should not be adjacent to each other.

2.2 General Dosing and Administration

Inject VICTOZA® subcutaneously once-daily at any time of day, independently of meals.

Initiate VICTOZA® with a dose of 0.6 mg per day for one week. The 0.6 mg dose is a starting dose intended to reduce gastrointestinal symptoms during initial titration, and is not effective for glycemic control. After one week at 0.6 mg per day, the dose should be increased to 1.2 mg. If the 1.2 mg dose does not result in acceptable glycemic control, the dose can be increased to 1.8 mg. If a dose is missed, resume the once-daily regimen as prescribed with the next scheduled dose. Do not administer an extra dose or increase in dose to make up for the missed dose.

If more than 3 days have elapsed since the last VICTOZA® dose, reinitiate VICTOZA® at 0.6 mg to 1.8 mg.

2.3 Concomitant Use with an Insulin Secretagogue (e.g., Sulfonylurea) or with Insulin

When initiating VICTOZA®, consider reducing the dose of concomitantly administered insulin secretagogues (such as sulfonylureas) to reduce the risk of hypoglycemia [see Warnings and Precautions (5.4) and Adverse Reactions (6)].

2.4 Dosage in Patients with Renal Impairment

No dose adjustment is recommended for patients with renal impairment.

3 DOSAGE FORMS AND STRENGTHS

Injection: 6 mg/mL solution in a pre-filled, multiple-dose pen that delivers doses of 0.6 mg, 1.2 mg, or 1.8 mg.

4 CONTRAINDICATIONS

Medullary Thyroid Carcinoma

VICTOZA® is contraindicated in patients with a personal or family history of medullary thyroid carcinoma (MTC) or in patients with Multiple Endocrine Neoplasia syndrome type 2 (MEN 2).

Hypersensitivity

VICTOZA® is contraindicated in patients with a prior serious hypersensitivity reaction to VICTOZA® or to any of the product components.

5 WARNINGS AND PRECAUTIONS

5.1 Risk of Thyroid C-Cell Tumors

Liraglutide causes dose-dependent and treatment-duration-dependent thyroid C-cell tumors (adenomas and/or carcinomas) at clinically relevant exposures in both genders of rats and mice [see Nonclinical Toxicology (13)]. Malignant thyroid C-cell carcinomas were detected in rats and mice. It is unknown whether VICTOZA® will cause thyroid C-cell tumors, including medullary thyroid carcinoma (MTC), in humans, as the human relevance of liraglutide-induced rodent thyroid C-cell tumors has not been determined.

5.2 Pancreatitis

Based on spontaneous postmarketing reports, acute pancreatitis, including fatal and non-fatal hemorrhagic or necrotizing pancreatitis, has been observed in patients treated with VICTOZA®. After initiation of VICTOZA®, observe patients carefully for signs and symptoms of pancreatitis (including persistent severe abdominal pain, sometimes radiating to the back and which may or may not be accompanied by vomiting). If pancreatitis is suspected, VICTOZA® should promptly be discontinued and appropriate management should be initiated. If pancreatitis is confirmed, VICTOZA® should not be restarted. Consider anti-diabetic therapies other than VICTOZA® in patients with a history of pancreatitis.

In clinical trials of VICTOZA®, there have been 13 cases of pancreatitis among VICTOZA®-treated patients and 1 case in a comparator (glimepiride) treated patient (2.7 vs. 0.5 cases per 1000 patient-years). Nine of the 13 cases with VICTOZA® were reported as acute pancreatitis and four were reported as chronic pancreatitis. In one case in a VICTOZA®-treated patient pancreatitis, with necrosis, was observed and led to death; however, clinical causality could not be established. Some patients had other risk factors for pancreatitis, such as a history of cholelithiasis or alcohol abuse.

5.3 Never Share a VICTOZA® Pen Between Patients

VICTOZA® pens must never be shared between patients, even if the needle is changed. Pen-sharing poses a risk for transmission of blood-borne pathogens.

5.4 Use with Medications Known to Cause Hypoglycemia

Patients receiving VICTOZA® in combination with an insulin secretagogue (e.g., sulfonylurea) or insulin may have an increased risk of hypoglycemia. The risk of hypoglycemia may be lowered by a reduction in the dose of sulfonylurea (or other concomitantly administered insulin secretagogues) or insulin [see Dosage and Administration (2.2), Adverse Reactions (6.1)].

5.5 Renal Impairment

VICTOZA® has not been found to be directly nephrotoxic in animal studies or clinical trials. There have been postmarketing reports of acute renal failure and worsening of chronic renal failure, which may require hemodialysis in VICTOZA®-treated patients [see Adverse Reactions (6.2)]. Some of these events were reported in patients without known underlying renal disease. A majority of the reported events occurred in patients who had experienced nausea, vomiting, diarrhea, or dehydration [see Adverse Reactions (6.1)]. Some of the reported events occurred in patients receiving one or more medications known to affect renal function or hydration status. Altered renal function has been reversed in many of the reported cases with supportive treatment and discontinuation of potentially causative agents, including VICTOZA®. Use caution when initiating or escalating doses of VICTOZA® in patients with renal impairment [see Use in Specific Populations (8.6)].

5.6 Hypersensitivity Reactions

There have been postmarketing reports of serious hypersensitivity reactions (e.g., anaphylactic reactions and angioedema) in patients treated with VICTOZA®. If a hypersensitivity reaction occurs, the patient should discontinue VICTOZA® and other suspected medications and promptly seek medical advice.

Angioedema has also been reported with other GLP-1 receptor agonists. Use caution in a patient with a history of angioedema with another GLP-1 receptor agonist because it is unknown whether such patients will be predisposed to angioedema with VICTOZA®.

5.7 Macrovascular Outcomes

There have been no clinical studies establishing conclusive evidence of macrovascular risk reduction with VICTOZA® or any other anti-diabetic drug.

6 ADVERSE REACTIONS

The following serious adverse reactions are described below or elsewhere in the prescribing information:

- Risk of Thyroid C-Cell Tumors [see Warnings and Precautions (5.1)]
- Pancreatitis [see Warnings and Precautions (5.2)]
- Use with Medications Known to Cause Hypoglycemia [see Warnings and Precautions (5.4)]
- Renal Impairment [see Warnings and Precautions (5.5)]
- Hypersensitivity Reactions [see Warnings and Precautions (5.6)]

6.1 Clinical Trials Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice.

Common Adverse Reactions

The data in Table 1 are derived from 5 placebo-controlled clinical trials [see Clinical Studies (14)]. These data reflect exposure of 1673 patients to VICTOZA® and a mean duration of exposure to VICTOZA® of 37.3 weeks. The mean age of patients was 58 years, 4% were 75 years or older and 54% were male. The population was 79% White, 6% Black or African American, 13% Asian; 4% were of Hispanic or Latino ethnicity. At baseline the population had diabetes for an average of 9.1 years and a mean HbA1c of 8.4%. Baseline estimated renal function was normal or mildly impaired in 88.1% and moderately impaired in 11.9% of the pooled population.
Table 1 shows common adverse reactions, excluding hypoglycemia, associated with the use of VICTOZA®. These adverse reactions occurred more commonly on VICTOZA® than on placebo and occurred in at least 5% of patients treated with VICTOZA®.

<table>
<thead>
<tr>
<th>Placebo N = 661</th>
<th>Liraglutide 1.2 mg N = 645</th>
<th>Liraglutide 1.8 mg N = 1024</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adverse Reaction</strong></td>
<td>(%)</td>
<td>(%)</td>
</tr>
<tr>
<td>Nausea</td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Headache</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>Nasopharyngitis</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Vomiting</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Decreased appetite</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Dyspepsia</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Upper Respiratory Infection</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Constipation</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Back Pain</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Cumulative proportions were calculated combining studies using Cochran-Mantel-Haenszel weights.

In an analysis of placebo- and active-controlled trials, the types and frequency of common adverse reactions, excluding hypoglycemia, were similar to those listed in Table 1.

Other Adverse Reactions

Gastrointestinal Adverse Reactions

In 3.3% of 5 placebo-controlled clinical trials, withdrawals due to gastrointestinal adverse reactions, occurred in 4.3% of VICTOZA®-treated patients and 0.5% of placebo-treated patients. Withdrawal due to gastrointestinal adverse events mainly occurred during the first 2-3 months of the trials.

Injection site reactions

Injection site reactions (e.g., injection site rash, erythema) were reported in approximately 2% of VICTOZA®-treated patients who discontinued due to injection site reactions.

Hypoglycemia

Hypoglycemia requiring the assistance of another person in placebo-controlled trials

In 5 placebo-controlled clinical trials of at least 26 weeks duration, hypoglycemia requiring the assistance of another person for treatment occurred in 8 VICTOZA®-treated patients (7.5 events per 1000 patient-years). Of these 8 VICTOZA®-treated patients, 7 patients were concomitantly using a sulfonylurea.

Table 2 Incidence (%) and Rate (episodes/patient year) of Hypoglycemia in 26-Week Combination Therapy Placebo-controlled Trials

<table>
<thead>
<tr>
<th>Placebo Comparator</th>
<th>VICTOZA® Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Add-on to Metformin</strong></td>
<td></td>
</tr>
<tr>
<td>Placebo + Metformin (N = 121)</td>
<td>VICTOZA® + Metformin (N = 724)</td>
</tr>
<tr>
<td>Patient not able to self-treat</td>
<td>0</td>
</tr>
<tr>
<td>Patient able to self-treat</td>
<td>2.5 (0.06)</td>
</tr>
<tr>
<td><strong>Add-on to Glimepiride</strong></td>
<td></td>
</tr>
<tr>
<td>Placebo + Glimepiride (N = 114)</td>
<td>VICTOZA® + Glimepiride (N = 695)</td>
</tr>
<tr>
<td>Patient not able to self-treat</td>
<td>0</td>
</tr>
<tr>
<td>Patient able to self-treat</td>
<td>2.6 (0.17)</td>
</tr>
<tr>
<td>Not classified</td>
<td>0</td>
</tr>
<tr>
<td><strong>Add-on to Metformin + Rosiglitazone</strong></td>
<td></td>
</tr>
<tr>
<td>Placebo + Metformin + Rosiglitazone (N = 175)</td>
<td>VICTOZA® + Metformin + Rosiglitazone (N = 355)</td>
</tr>
<tr>
<td>Patient not able to self-treat</td>
<td>0</td>
</tr>
<tr>
<td>Patient able to self-treat</td>
<td>4.6 (0.15)</td>
</tr>
<tr>
<td>Not classified</td>
<td>1.1 (0.03)</td>
</tr>
<tr>
<td><strong>Add-on to Metformin + Glimepiride</strong></td>
<td></td>
</tr>
<tr>
<td>Placebo + Metformin + Glimepiride (N = 114)</td>
<td>VICTOZA® + Metformin + Glimepiride (N = 230)</td>
</tr>
<tr>
<td>Patient not able to self-treat</td>
<td>0</td>
</tr>
<tr>
<td>Patient able to self-treat</td>
<td>16.7 (0.95)</td>
</tr>
<tr>
<td>Not classified</td>
<td>0</td>
</tr>
</tbody>
</table>

*Patient not able to self-treat* is defined as an event requiring the assistance of another person for treatment.

Malnutrition

In a pooled analysis of clinical trials, the incidence rate (per 1,000 patient-years) for malignant neoplasms (based on investigator-reported events, medical history, pathology reports, and surgical reports from both blinded and open-label study periods) was 10.9 for VICTOZA®, 6.3 for placebo, and 7.2 for active comparator. After excluding papillary thyroid carcinoma events [See Adverse Reactions (6.1)], no particular cancer cell type predominated. Seven malignant neoplasm events were reported beyond 1 year of exposure to study medication, six events among VICTOZA®-treated patients (4 colon, 1 prostate and 1 nasopharyngeal), no events with placebo and one event with active comparator (colon).

Causality has not been established.

Papillary thyroid carcinoma

In clinical trials of VICTOZA®, there were 7 reported cases of papillary thyroid carcinoma in patients treated with VICTOZA® and 1 case in a comparator-treated patient (1.5 v. 0.5 cases per 1000 patient-years). Most of these papillary thyroid carcinomas were <1 cm in greatest diameter and were diagnosed in surgical pathology specimens after thyroidectomy prompted by findings on protocol-specified screening with serum calcitonin or thyroid ultrasound.

Cholelithiasis and cholecystitis

In clinical trials of Saxenda® (liraglutide at doses up to 3 mg), 1.5% and 0.6% of Saxenda®-treated patients reported adverse events of cholelithiasis and cholecystitis versus 0.5% and 0.2% of placebo-treated patients. The majority of Saxenda®-treated patients with adverse events of cholelithiasis and cholecystitis required cholecystectomy. In clinical trials of VICTOZA®, the incidence of cholelithiasis was 0.3% in both VICTOZA®-treated and placebo-treated patients. The incidence of cholecystitis was 0.2% in both VICTOZA®-treated and placebo-treated patients.

Laboratory Tests

Bilirubin

In the five clinical trials of at least 26 weeks duration, mildly elevated serum bilirubin concentrations (elevations to no more than twice the upper limit of the reference range) occurred in 4.0% of VICTOZA®-treated patients, 2.8% of placebo-comparator patients and 3.6% of active-comparator-treated patients. This finding was not accompanied by abnormalities in other liver tests. The significance of this isolated finding is unknown.

Calcitonin

Calcitonin, a biological marker of MTC, was measured throughout the clinical development program. At the end of the clinical trials, adjusted mean serum calcitonin concentrations were higher in VICTOZA®-treated patients compared to placebo-treated patients but not compared to patients receiving active comparator. Between treatment group differences in adjusted mean serum calcitonin values were approximately 0.1 ng/L or less. Among patients with pretreatment calcitonin >20 ng/L, calcitonin elevations to >20 ng/L occurred in 0.7% of VICTOZA®-treated patients, 0.3% of placebo-treated patients, and 0.5% of active-comparator-treated patients. The clinical significance of these findings is unknown.

Vital signs

VICTOZA® did not have adverse effects on blood pressure. Mean increases from baseline in heart rate of 2 to 3 beats per minute have been observed with VICTOZA® compared to placebo. The long-term clinical effects of the increase in pulse rate have not been established [See Warnings and Precautions (5.7)].

6.2 Immunogenicity

Consistent with the potentially immunogenic properties of protein and peptide pharmaceuticals, patients treated with VICTOZA® may develop anti-liraglutide antibodies. Approximately 50-70% of VICTOZA®-treated patients in five double-blind clinical trials of 26 weeks duration or longer were tested for the presence of anti-liraglutide antibodies at the end of treatment. Low titers (concentrations not requiring dilution of serum) of anti-liraglutide antibodies were detected in 8.6% of these VICTOZA®-treated patients. Sampling was not performed uniformly across all patients in the clinical trials, and this may have resulted in an underestimate of the actual percentage of patients who developed antibodies. Cross-reacting anti-liraglutide antibodies to native glucagon-like peptide-1 (GLP-1) occurred in 6.9% of the VICTOZA®-treated patients in the double-blind 52-week monotherapy trial and in 4.8% of the VICTOZA®-treated patients in the double-blind 26-week add-on combination therapy trials. These cross-reacting antibodies were not tested for neutralizing effect against native GLP-1, and thus the potential for clinically significant neutralization of native GLP-1 was not assessed.

Among VICTOZA®-treated patients who developed anti-liraglutide antibodies, the most common category of adverse events was that of infections, which occurred among 40% of these patients compared to 36%, 34% and 35% of antibody-negative VICTOZA®-treated, placebo-treated and active-control-treated patients, respectively. The specific infections which occurred with greater frequency among VICTOZA®-treated antibody-positive patients were primarily nonserious upper respiratory tract infections, which occurred among 11% of VICTOZA®-treated antibody-positive patients; and among 7%, 7% and 5% of antibody-negative VICTOZA®-treated, placebo-treated and active-control-treated patients, respectively. Among VICTOZA®-treated antibody-negative patients, the most common category of adverse events was that of gastrointestinal tract events, which occurred in 45%, 18% and 19% of antibody-negative VICTOZA®-treated, placebo-treated and active-control-treated patients, respectively. Antibody formation was not associated with reduced efficacy of VICTOZA® when comparing mean HbA1c of all antibody-positive and all antibody-negative patients. However, the 3 patients with the highest titers of anti-liraglutide antibodies had no reduction in HbA1c with VICTOZA® treatment.

In five double-blind clinical trials of VICTOZA®, events from a composite of adverse events potentially related to immunogenicity (e.g., urticaria) occurred among 0.8% of VICTOZA®-treated patients and among 0.4% of comparator-treated patients. Urticaria occurred for approximately one-half of the events in this composite for VICTOZA®-treated patients. Patients who developed anti-liraglutide antibodies were not more likely to develop events from the immunogenicity events composite than were patients who did not develop anti-liraglutide antibodies.

6.3 Post-Marketing Experience

The following additional adverse reactions have been reported after post-approval use of VICTOZA®. Because these events are reported voluntarily from a population of uncertain size, it is generally not possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

- **Medullary thyroid carcinoma** [See Warnings and Precautions (5.1)]
- **Dehydration** resulting from nausea, vomiting and diarrhea. [See Warnings and Precautions (5.5) and Patient Counseling Information (17)]
- **Increased serum creatinine**, acute renal failure or worsening of chronic renal failure, sometimes requiring hemodialysis. [See Warnings and Precautions (5.5) and Patient Counseling Information (17)]
- **Angioedema** and anaphylactic reactions. [See Contraindications (4), Warnings and Precautions (5.6), Patient Counseling Information (17)]
VICTOZA® (liraglutide) injection, solution for subcutaneous use

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy

Pregnancy Category C.

There are no adequate and well-controlled studies of VICTOZA® in pregnant women. VICTOZA® should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. Liraglutide has been shown to be teratogenic in rats at or above 0.8 times the human systemic exposures resulting from the maximum recommended human dose (MRHD) of 1.8 mg/day based on plasma area under the time-concentration curve (AUC). Liraglutide has been shown to cause reduced growth and increased total major abnormalities in rabbits at systemic exposures below human exposure at the MRHD based on plasma AUC.

Female rats given subcutaneous doses of 0.1, 0.25 and 1.0 mg/kg/day liraglutide beginning 2 weeks before mating through gestation day 17 had estimated systemic exposures 0.8-, 3-, and 11-times the human exposure at the MRHD based on plasma AUC comparison. The number of early embryonic deaths in the 1 mg/kg/day group increased slightly. Fetal abnormalities and variations in kidneys and blood vessels, irregular ossification of the skull, and a more complete state of ossification occurred at all doses. Mottled liver and minimally kinked ribs occurred at the highest dose. The incidence of fetal malformations in liraglutide-treated groups exceeding concurrent and historical controls were misspaped oropharynx and/or narrowed opening into larynx at 0.1 mg/kg/day and umbilical hernia at 0.1 and 0.25 mg/kg/day.

Pregnant rabbits given subcutaneous doses of 0.01, 0.025 and 0.05 mg/kg/day liraglutide from gestation day 6 through day 18 inclusive, had estimated systemic exposures less than the human exposure at the MRHD of 1.8 mg/day at all doses, based on plasma AUC. Liraglutide decreased fetal weight and dose-dependently increased the incidence of total major fetal abnormalities at all doses. The incidence of malformations exceeded concurrent and historical controls at 0.01 mg/kg/day (kidneys, scapula), ≥ 0.01 mg/kg/day (eyes, forelimb), 0.025 mg/kg/day (brain, tail and sacral vertebrae, major blood vessels and heart, umbilicus), ≥ 0.025 mg/kg/day (sternum) and at 0.06 mg/kg/day (parietal bones, major blood vessels). Irregular ossification and/ or skeletal abnormalities occurred in the skull and jaw, vertebrae and ribs, sternum, pelvis, tail, and scapula, and dose-dependent minor skeletal variations were observed. Visceral abnormalities occurred in blood vessels, lung, liver, and esophagus. Bilobed or bifurcated gallbladder was seen in all treatment groups, but not in the control group.

In pregnant female rats given subcutaneous doses of 0.1, 0.25 and 1.0 mg/kg/day liraglutide from gestation day 6 through day 18 inclusive, had estimated systemic exposures less than the human exposure at the MRHD of 1.8 mg/day at all doses, based on plasma AUC. A slight delay in parturition was observed in the majority of treated rats. Group mean body weight variations were observed. Visceral abnormalities occurred in blood vessels, lung, liver, and esophagus. Bilobed or bifurcated gallbladder was seen in all treatment groups, but not in the control group.

8.2 Pediatric Use

Safety and effectiveness of VICTOZA® have not been established in pediatric patients. VICTOZA® is not recommended for use in pediatric patients.

8.3 Nursing Mothers

It is not known whether VICTOZA® is excreted in human milk. Because many drugs are excreted in human milk and because of the potential for tumorigenicity shown for liraglutide in animal studies, a decision should be made whether to discontinue nursing or to discontinue VICTOZA® taking into account the importance of the drug to the mother. In lactating rats, liraglutide was excreted unchanged in milk at concentrations approximately 50% of maternal plasma concentrations.

8.4 Pediatric Use

Safely and effectiveness of VICTOZA® have not been established in pediatric patients. VICTOZA® is not recommended for use in pediatric patients.

8.5 Geriatric Use

In the VICTOZA® clinical trials, a total of 797 (20%) of the patients were 65 years of age and over and 113 (2.8%) were 75 years of age and over. No overall differences in safety or effectiveness were observed between these patients and younger patients, but greater sensitivity of some older individuals cannot be ruled out.

8.6 Renal Impairment

No dose adjustment of VICTOZA® is recommended for patients with renal impairment (see Clinical Pharmacology (12.3)). The safety and efficacy of VICTOZA® was evaluated in a 26-week clinical study that included patients with moderate renal impairment (eGFR 30 to 60 mL/min/1.73 m²) (see Clinical Studies (14.3)). There is limited experience with VICTOZA® in patients with severe renal impairment including end stage renal disease. There have been postmarketing reports of acute renal failure and worsening of chronic renal failure, which may sometimes require hemodialysis (see Warnings and Precautions (5.5) and Adverse Reactions (6.2)). Use caution in patients who experience dehydration.

8.7 Hepatic Impairment

There is limited experience in patients with mild, moderate or severe hepatic impairment. Therefore, VICTOZA® should be used with caution in this patient population. No dose adjustment of VICTOZA® is recommended for patients with hepatic impairment (see Clinical Pharmacology (12.3)).
Glucagon secretion

VICTOZA® lowered blood glucose by stimulating insulin secretion and lowering glucagon secretion. A single dose of VICTOZA® 7.5 mcg/kg (0.7 mcg) did not impair glucagon response to low glucose concentrations.

Cardiac Electrophysiology (QTc)

The effect of VICTOZA® on cardiac repolarization was tested in a QTc study. VICTOZA® at steady state concentrations with daily doses up to 1.8 mg did not produce QTc prolongation.

12.3 Pharmacokinetics

Absorption - Following subcutaneous administration, maximum concentrations of liraglutide are achieved at 8-12 hours post dosing. The mean peak (Cmax) and total (AUC) exposures of liraglutide were proportional to the dose, with a mean bioavailability of 85% for the single-dose administration.

Absorption of the single-dose VICTOZA® solution was evaluated in subjects with mild, moderate, and severe hepatic impairment. Following subcutaneous administration, maximum concentrations of liraglutide were achieved within 8-12 hours post dosing. The mean peak (Cmax) and total (AUC) exposures of liraglutide decreased by 31%, 36%, and 42%, respectively, compared to healthy subjects.

Age had no effect on the pharmacokinetics of VICTOZA® based on a pharmacokinetic study in subjects aged 18-80 years.

Metabolism - During the initial 24 hours following administration of a single [3H]-liraglutide dose to healthy subjects, the majority of the administered radioactivity was excreted as liraglutide-related metabolites in urine or feces. Approximately 79% of the administered radioactivity was recovered, with 55% in urine and 24% in feces.

Elimination - Following a [3H]-liraglutide dose, intact liraglutide was not detected in urine or feces. The majority of the administered radioactivity was excreted during the first 6-8 days. The mean apparent clearance following subcutaneous administration of a single dose of liraglutide is approximately 1.2 L/hr with an elimination half-life of approximately 13 hours, making VICTOZA® suitable for once daily administration.

Specific Populations

13. NONCLINICAL TOXICOLOGY

13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

A 104-week carcinogenicity study was conducted in male and female CD-1 mice at doses of 0.03, 0.2, and 1.0 mg/kg/day liraglutide administered by bolus subcutaneous injection yielding systemic exposures 0.2-, 2-, and 45-times the human exposure, respectively, at the MRHD of 1.8 mg/day based on plasma AUC comparison. A dose-related increase in benign thyroid C-cell adenomas was seen in the 1.0 and the 3.0 mg/kg/day groups with incidences of 13% and 19% in males and 6% and 20% in females, respectively. C-cell adenomas did not occur in control groups or 0.03 and 0.2 mg/kg/day groups. Treatment-related malignant C-cell carcinomas occurred in 5% of females in the 3.0 mg/kg/day group. Thyroid C-cell tumors are rare findings during carcinogenicity testing in mice. A treatment-related increase in fibrosarcomas was seen on the dorsal skin and subcutis, the body surface used for drug injection, in males in the 3 mg/kg/day group. These fibrosarcomas were attributed to the high local concentration of drug near the injection site. The liraglutide concentration in the clinical formulation (6 mg/mL) is 10 times higher than the concentration in the formulation used to administer a 3 mg/kg/day liraglutide to mice in the carcinogenicity study (0.6 mg/mL).

A 104-week carcinogenicity study was conducted in male and female Sprague Dawley rats at doses of 0.075, 0.25, and 0.75 mg/kg/day liraglutide administered by bolus subcutaneous injection with exposures 0.2-, 2-, and 45-times the human exposure, respectively, resulting from the MRHD based on plasma AUC comparison. A treatment-related increase in benign thyroid C-cell adenomas was seen in males in 0.25 and 0.75 mg/kg/day liraglutide groups with incidences of 12%, 16%, and 46% and in all female liraglutide-treated groups with incidences of 10%, 27%, 33%, and 56% in control, 0.075, 0.25, and 0.75 mg/kg/day groups, respectively. A treatment-related increase in malignant thyroid C-cell carcinomas was observed in all male liraglutide-treated groups with incidences of 2%, 8%, 6%, and 14% and in females at 0.25 and 0.75 mg/kg/day with incidences of 0%, 4%, and 6% in control, 0.075, 0.25, and 0.75 mg/kg/day groups, respectively. Thyroid C-cell carcinomas are rare findings during carcinogenicity testing in rats. Studies in mice demonstrated that liraglutide-induced C-cell proliferation was dependent on the GLP-1 receptor and that liraglutide did not cause activation of the RARα-during Tranduction (RET) proto-oncogene in thyroid C-cells.

Human relevance of thyroid C-cell tumors in mice and rats is unknown and has not been determined by clinical studies or nonclinical studies [see Boxed Warning and Warnings and Precautions (5.1)].

Liraglutide was negative with and without metabolic activation in the Ames test for mutagenicity and in a human peripheral blood lymphocyte chromosome aberration test for clastogenicity. Liraglutide was negative in repeat-dose in vivo micronucleus tests in rats.

In rat fertility studies using subcutaneous doses of 0.1, 0.25, and 1.0 mg/kg/day liraglutide, males were treated for 4 weeks prior to and throughout mating and females were treated 2 weeks prior to and throughout mating until gestation day 17. No direct adverse effects on male fertility or female fertility were observed at doses up to 1.0 mg/kg/day, a high dose yielding an estimated systemic exposure 11- times the human exposure at the MRHD, based on plasma AUC. In female rats, an increase in early embryonic deaths occurred at 1.0 mg/kg/day. Reduced body weight gain and food consumption were observed in females at the 1.0 mg/kg/day dose.

14 CLINICAL STUDIES

A total of 6367 patients with type 2 diabetes participated in 9 phase 3 trials. There were 6 double-blind (in these trials an open-label control insulin glargine arm), randomized, controlled clinical trials, one of 52 weeks duration and five of 26 weeks duration (including one 26 week trial in patients with T2DM and moderate renal impairment). There were also three 26 week open-label trials; one comparing VICTOZA® to twice-daily exenatide, one comparing VICTOZA® to sitagliptin and one comparing VICTOZA®+metformin-insulin detemir to VICTOZA®+metformin alone. These multinational trials were conducted to evaluate the glycemic efficacy and safety of VICTOZA® in type 2 diabetes as monotherapy and in combination with one or two oral anti-diabetic medications or insulin detemir. The 8 add-on combination therapy trials enrolled patients who were previously treated with anti-diabetic therapy, and approximately two-thirds of patients in the monotherapy arm were previously treated with anti-diabetic therapy. In total, 272 (4%) of the 6367 patients in these 9 trials were new to anti-diabetic therapy. In these 9 clinical trials, patients ranged in age from 18-80 years old and 54% were men. Approximately 82% of patients were Caucasian, and 6% were Black. In the 6 trials where diabetes was captured, 10% of patients were Hispanic/Latino (n=650).
In each of the placebo-controlled trials, treatment with VICTOZA® produced clinically and significantly greater improvements in hemoglobin A1c and fasting plasma glucose (FPG) compared to placebo. All VICTOZA®-treated patients started at 0.6 mg/day. The dose was increased in weekly intervals by 0.3 mg/day for one week, increasing to 0.9 mg/day for another two weeks, and finally increasing to 1.8 mg/day. Treatment with VICTOZA® 1.8 mg and 1.2 mg resulted in a statistically significant reduction in HbA1c compared to glimepiride (Table 3). The percentage of patients who discontinued due to inefficacy therapy was 3.6% in the VICTOZA® 1.8 mg treatment group, 6.0% in the VICTOZA® 1.2 mg treatment group, and 10.1% in the glimepiride-treatment group.

Table 3 Results of a 52-week monotherapy trial

<table>
<thead>
<tr>
<th>Intent-to-Treat Population (N)</th>
<th>VICTOZA® 1.8 mg</th>
<th>VICTOZA® 1.2 mg</th>
<th>Glimepiride 8 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>246</td>
<td>251</td>
<td>248</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HbA1c (%) (Mean)</th>
<th>Baseline</th>
<th>Change from baseline (adjusted mean)</th>
<th>Difference from glimepiride arm (adjusted mean)</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.2</td>
<td>-1.1</td>
<td>-0.6**</td>
<td>(-0.8, -0.4)</td>
<td>(-0.5, -0.1)</td>
</tr>
</tbody>
</table>

Percentage of patients achieving A1c <7%: 51% in the VICTOZA® 1.8 mg treatment group, 43% in the VICTOZA® 1.2 mg treatment group, and 28% in the glimepiride-treatment group.

Fasting Plasma Glucose (mg/dL) (Mean)

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Change from baseline (adjusted mean)</th>
<th>Difference from glimepiride arm (adjusted mean)</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>172</td>
<td>-26</td>
<td>-2.0**</td>
<td>(-2.9, -1.0)</td>
</tr>
</tbody>
</table>

Body Weight (kg) (Mean)

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Change from baseline (adjusted mean)</th>
<th>Difference from glimepiride arm (adjusted mean)</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>92.6</td>
<td>-2.5</td>
<td>-3.2**</td>
<td>(-3.9, -2.5)</td>
</tr>
</tbody>
</table>

*p-value <0.05
**p-value <0.0001

VICTOZA® Compared to Sitagliptin, Both as Add-on to Metformin

In this 26-week, open-label trial, 665 patients on a background of metformin ≥1500 mg per day were randomized to VICTOZA® 1.2 mg once-daily, VICTOZA® 1.8 mg once-daily or sitagliptin 100 mg once-daily, all dosed according to approved labeling. Patients were to continue their current treatment on metformin at a stable, pre-trial dose level and dosing frequency.

The primary endpoint was the change in HbA1c from baseline to Week 26. Treatment with VICTOZA® resulted in statistically significant reductions in HbA1c compared to sitagliptin 100 mg (Table 5). The percentage of patients who discontinued due to inefficacy therapy was 3.1% in the VICTOZA® 1.2 mg group, 0.5% in the VICTOZA® 1.8 mg treatment group, and 4.1% in the sitagliptin 100 mg treatment group. From a mean baseline body weight of 94 kg, there was a mean reduction of 2.7 kg for VICTOZA® 1.2 mg, 3.3 kg for VICTOZA® 1.8 mg, and 0.8 kg for sitagliptin 100 mg.

Table 5 Results of a 26-week open-label trial of VICTOZA® Compared to Sitagliptin (both in combination with metformin)

<table>
<thead>
<tr>
<th>Intent-to-Treat Population (N)</th>
<th>VICTOZA® 1.8 mg + Metformin</th>
<th>VICTOZA® 1.2 mg + Metformin</th>
<th>Placebo + Metformin</th>
<th>Sitagliptin 100 mg + Metformin</th>
</tr>
</thead>
<tbody>
<tr>
<td>242</td>
<td>240</td>
<td>121</td>
<td>242</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HbA1c (%) (Mean)</th>
<th>Baseline</th>
<th>Change from baseline (adjusted mean)</th>
<th>Difference from placebo + metformin arm (adjusted mean)</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.4</td>
<td>-1.0</td>
<td>-1.1**</td>
<td>(-1.3, -0.9)</td>
<td>(-1.1, -0.9)</td>
</tr>
</tbody>
</table>

Percentage of patients achieving A1c <7%: 42% in the VICTOZA® 1.8 mg + metformin treatment group, 35% in the VICTOZA® 1.2 mg + metformin treatment group, 21% in the placebo + metformin treatment group, and 20% in the sitagliptin + metformin treatment group.

Fasting Plasma Glucose (mg/dL) (Mean)

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Change from baseline (adjusted mean)</th>
<th>Difference from sitagliptin arm (adjusted mean)</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>88.0</td>
<td>-2.6</td>
<td>-1.3**</td>
<td>(-2.2, -0.4)</td>
</tr>
</tbody>
</table>

*Intent-to-treat population using last observation on study
**Least squares mean adjusted for baseline value
*For glimepiride, one-half of the maximal approved United States dose.

VICTOZA® (liraglutide) injection, solution for subcutaneous use

14.1 Monotherapy

In this 52-week trial, 746 patients were randomized to VICTOZA® 1.2 mg, VICTOZA® 1.8 mg, or glimepiride 8 mg. Patients who were randomized to glimepiride were initially treated with 2 mg daily for two weeks, increasing to 4 mg daily for another two weeks, and finally increasing to 8 mg daily. Treatment with VICTOZA® 1.8 mg and 1.2 mg resulted in a statistically significant reduction in HbA1c compared to glimepiride (Table 3). The percentage of patients who discontinued due to inefficacy therapy was 3.6% in the VICTOZA® 1.8 mg treatment group, 6.0% in the VICTOZA® 1.2 mg treatment group, and 10.1% in the glimepiride-treatment group.

Table 4 Results of a 26-week trial of VICTOZA® as add-on to metformin

<table>
<thead>
<tr>
<th>Intent-to-Treat Population (N)</th>
<th>VICTOZA® 1.8 mg + Metformin</th>
<th>VICTOZA® 1.2 mg + Metformin</th>
<th>Placebo + Metformin</th>
<th>Glimepiride 4 mg + Metformin</th>
</tr>
</thead>
<tbody>
<tr>
<td>242</td>
<td>240</td>
<td>121</td>
<td>242</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HbA1c (%) (Mean)</th>
<th>Baseline</th>
<th>Change from baseline (adjusted mean)</th>
<th>Difference from placebo + metformin arm (adjusted mean)</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.4</td>
<td>-1.0</td>
<td>-0.1**</td>
<td>(-0.8, -0.4)</td>
<td>(-0.5, -0.2)</td>
</tr>
</tbody>
</table>

Percentage of patients achieving A1c <7%: 42% in the VICTOZA® 1.8 mg + metformin treatment group, 35% in the VICTOZA® 1.2 mg + metformin treatment group, 21% in the placebo + metformin treatment group, and 20% in the sitagliptin + metformin treatment group.
Combination Therapy with Metformin and Insulin

This 26-week open-label trial enrolled 988 patients with inadequate glycemic control (HbA1c >7-10%) on metformin (≥1500 mg/day) alone or inadequate glycemic control (HbA1c >7.5-8.5%) on metformin (≥1500 mg/day) and a sulfonylurea. Patients who were on metformin and a sulfonylurea discontinued the sulfonylurea then all patients entered a 12-week run-in period during which they received add-on therapy with VICTOZA® titrated to 1.8 mg once-daily. At the end of the run-in period, 496 patients (50%) achieved HbA1c <7% with VICTOZA® 1.8 mg and metformin and continued treatment in a non-randomized, observational arm. Another 167 patients (17%) withdrew from the trial during the run-in period with approximately one-half of these patients doing so because of gastrointestinal adverse reactions (see Adverse Reactions (6.1)). The remaining 323 patients with HbA1c ≥7% (33% of those who entered the run-in period) were randomized to 26 weeks of once-daily insulin detemir administered in the evening as add-on therapy (N=162) or to continued, unchanged treatment with VICTOZA® 1.8 mg and metformin (N=161). The starting dose of insulin detemir was 10 units/day and the mean dose at the end of the 26-week randomized period was 30 units/day. During the 26-week randomized treatment period, the percentage of patients who discontinued due to ineffective therapy was 11.2% in the group randomized to continued treatment with VICTOZA® 1.8 mg and metformin and 12.2% in the group randomized to add-on therapy with insulin detemir.

Treatment with insulin detemir as add-on to VICTOZA® 1.8 mg + metformin resulted in statistically significant reductions in HbA1c and FPG compared to continued, unchanged treatment with VICTOZA® 1.8 mg + metformin alone (Table 6). From a mean baseline body weight of 96 kg after randomization, there was a mean reduction of 0.3 kg in the patients who received insulin detemir add-on therapy compared to a mean reduction of 1.1 kg in the patients who continued on unchanged treatment with VICTOZA® 1.8 mg + metformin alone.

Table 6 Results of a 26-week open label trial of Insulin detemir as add-on to VICTOZA® + metformin compared to continued treatment with VICTOZA® + metformin alone in patients not achieving HbA1c < 7% after 12 weeks of Metformin and VICTOZA®a

<table>
<thead>
<tr>
<th></th>
<th>Insulin detemir + VICTOZA® + Metformin</th>
<th>VICTOZA® + Metformin</th>
</tr>
</thead>
<tbody>
<tr>
<td>HbA1c (%) (Mean)</td>
<td>7.6</td>
<td>7.6</td>
</tr>
<tr>
<td>Percentage of patients achieving A1c &lt;7%</td>
<td>43</td>
<td>17</td>
</tr>
<tr>
<td>Fasting Plasma Glucose (mg/dL) (Mean)</td>
<td>166</td>
<td>159</td>
</tr>
<tr>
<td>Change from baseline (adjusted mean)</td>
<td>-0.5</td>
<td>0</td>
</tr>
<tr>
<td>Difference from VICTOZA® + metformin arm (LS mean)b</td>
<td>-0.5**</td>
<td>(-0.7, -0.4)</td>
</tr>
<tr>
<td>95% Confidence Interval</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p-value <0.0001 for VICTOZA® compared to sitagliptin

P values derived from change from baseline ANCOVA model.

Insulin detemir + VICTOZA® + Glimepiride + Metformin vs. Placebo + Glimepiride + Metformin vs. Rosiglitazone 4 mg + Glimepiride

Add-on to Metformin and Sulfonylurea

In this 26-week trial, 581 patients were randomized to VICTOZA® 1.8 mg, placebo, or insulin glargine, all as add-on to metformin and glimepiride. Randomization took place after a 6-week run-in period consisting of a 3-week forced metformin and glimepiride titration period followed by a maintenance period of another 3 weeks. During the titration period, doses of metformin and glimepiride were to be increased up to 2000 mg/day and 4 mg/day, respectively. After randomization, patients randomized to VICTOZA® 1.8 mg underwent a 2 week period of titration with VICTOZA®. During the trial, the VICTOZA® and metformin doses were fixed, although insulin glargine and insulin glargine doses could be adjusted. Patients titrated glargine twice-weekly during the first 8 weeks of treatment based on self-measured fasting plasma glucose on the day of titration. After Week 8, the frequency of insulin glargine titration was left to the discretion of the investigator; but, at a minimum, the glargine dose was to be revised, if necessary, at Weeks 12 and 18. Only 20% of glargine-treated patients achieved the pre-specified target fasting plasma glucose of ≤100 mg/dL. Therefore, optimal titration of the insulin glargine dose was not achieved in most patients.

Treatment with VICTOZA® as add-on to glimepiride and metformin resulted in a statistically significant mean reduction in HbA1c compared to placebo add-on to glimepiride and metformin (Table 8). The percentage of patients who discontinued due to ineffective therapy was 0.9% in the VICTOZA® 1.8 mg + metformin + glimepiride treatment group, 0.4% in the insulin glargine + metformin + glimepiride treatment group, and 11.3% in the placebo + metformin + glimepiride treatment group.

Table 8 Results of a 26-week trial of VICTOZA® as add-on to metformin and sulfonylurea

<table>
<thead>
<tr>
<th></th>
<th>VICTOZA® 1.8 mg + Glimepiride</th>
<th>VICTOZA® 1.2 mg + Glimepiride</th>
<th>Placebo + Glimepiride</th>
<th>Rosiglitazone 4 mg + Glimepiride</th>
</tr>
</thead>
<tbody>
<tr>
<td>HbA1c (%) (Mean)</td>
<td>8.5</td>
<td>8.5</td>
<td>8.4</td>
<td>8.4</td>
</tr>
<tr>
<td>Percentage of patients achieving A1c &lt;7%</td>
<td>42</td>
<td>35</td>
<td>7</td>
<td>22</td>
</tr>
<tr>
<td>Fasting Plasma Glucose (mg/dL) (Mean)</td>
<td>174</td>
<td>177</td>
<td>171</td>
<td>179</td>
</tr>
<tr>
<td>Body Weight (kg) (Mean)</td>
<td>83.0</td>
<td>80.0</td>
<td>81.9</td>
<td>80.6</td>
</tr>
</tbody>
</table>

*p-value <0.0001 for VICTOZA® compared to sitagliptin

Add-on to Sulfonylurea

In this 26-week trial, 1041 patients were randomized to VICTOZA® 0.6 mg, VICTOZA® 1.2 mg, VICTOZA® 1.8 mg, placebo, or rosiglitazone 4 mg (one-half of the maximal approved dose in the United States), all as add-on to glimepiride. Randomization occurred after a 4-week run-in period consisting of an initial, 2-week, forced-glimepiride titration period followed by a maintenance period of another 2 weeks. During the titration period, doses of glimepiride were increased to 4 mg/day. The doses of glimepiride could be reduced (at the discretion of the investigator) from 4 mg/day to 3 mg/day or 2 mg/day (minimum) after randomization, in the event of unacceptable hypoglycemia or other adverse events.

Treatment with VICTOZA® 1.2 mg and 1.8 mg as add-on to glimepiride resulted in a statistically significant reduction in mean HbA1c compared to placebo add-on to glimepiride (Table 7). The percentage of patients who discontinued due to ineffective therapy was 3.0% in the VICTOZA® 1.8 mg + glimepiride treatment group, 3.5% in the VICTOZA® 1.2 mg + glimepiride treatment group, 17.5% in the placebo + glimepiride treatment group, and 6.9% in the rosiglitazone + glimepiride treatment group.
VICTOZA® Compared to Exenatide, Both as Add-on to Metformin and/or Sulfonylurea Therapy

In this 26-week, open-label trial, 464 patients on a background of metformin monotherapy, sulfonylurea monotherapy or a combination of metformin and sulfonylurea were randomized to once daily VICTOZA® 1.8 mg or exenatide 10 mcg twice daily. Maximally tolerated doses of background therapy were to remain unchanged for the duration of the trial. Patients randomized to exenatide started on a dose of 5 mcg twice-daily for 4 weeks and then were escalated to 10 mcg twice daily.

Treatment with VICTOZA® 1.8 mg resulted in statistically significant reductions in HbA1c and FPG relative to exenatide (Table 9). The percentage of patients who discontinued for ineffective therapy was 0.4% in the VICTOZA® treatment group and 0% in the exenatide treatment group. Both treatment groups had a mean decrease from baseline in body weight of approximately 3 kg.

Table 9 Results of a 26-week open-label trial of VICTOZA® versus Exenatide (both in combination with metformin and/or sulfonylurea) ±

<table>
<thead>
<tr>
<th></th>
<th>VICTOZA® 1.8 mg</th>
<th>Exenatide 10 mcg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intent-to-Treat Population (N)</td>
<td>233</td>
<td>231</td>
</tr>
<tr>
<td>HbA1c (%) (Mean)</td>
<td>8.2</td>
<td>8.1</td>
</tr>
<tr>
<td>Change from baseline (adjusted mean)</td>
<td>-1.1</td>
<td>-0.8</td>
</tr>
<tr>
<td>Difference from exenatide arm (adjusted mean)</td>
<td>-0.3**</td>
<td>(-0.5, -0.2)</td>
</tr>
<tr>
<td>95% Confidence Interval</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of patients achieving A1c &lt; 7%</td>
<td>54</td>
<td>43</td>
</tr>
</tbody>
</table>

Fasting Plasma Glucose (mg/dL) (Mean)

<table>
<thead>
<tr>
<th></th>
<th>VICTOZA® 1.8 mg</th>
<th>Exenatide 10 mcg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>176</td>
<td>171</td>
</tr>
<tr>
<td>Change from baseline (adjusted mean)</td>
<td>-29</td>
<td>-11</td>
</tr>
<tr>
<td>Difference from exenatide arm (adjusted mean)</td>
<td>-18**</td>
<td>(-25, -12)</td>
</tr>
<tr>
<td>95% Confidence Interval</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 10 Results of a 26-week trial of VICTOZA® as add-on to metformin and thiazolidinedione ±

<table>
<thead>
<tr>
<th></th>
<th>VICTOZA® 1.8 mg + Metformin + Rosiglitazone</th>
<th>VICTOZA® 1.2 mg + Metformin + Rosiglitazone</th>
<th>Placebo + Metformin + Rosiglitazone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intent-to-Treat Population (N)</td>
<td>178</td>
<td>177</td>
<td>175</td>
</tr>
<tr>
<td>HbA1c (%) (Mean)</td>
<td>8.6</td>
<td>8.5</td>
<td>8.4</td>
</tr>
<tr>
<td>Change from baseline (adjusted mean)</td>
<td>-1.5</td>
<td>-1.5</td>
<td>-0.5</td>
</tr>
<tr>
<td>Difference from placebo arm (adjusted mean)</td>
<td>-0.9**</td>
<td>(-1.1, -0.8)</td>
<td>-0.9** (-1.1, -0.8)</td>
</tr>
<tr>
<td>95% Confidence Interval</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of patients achieving A1c &lt; 7%</td>
<td>54</td>
<td>57</td>
<td>28</td>
</tr>
</tbody>
</table>

Fasting Plasma Glucose (mg/dL) (Mean)

<table>
<thead>
<tr>
<th></th>
<th>VICTOZA® 1.8 mg + Metformin + Rosiglitazone</th>
<th>VICTOZA® 1.2 mg + Metformin + Rosiglitazone</th>
<th>Placebo + Metformin + Rosiglitazone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>185</td>
<td>181</td>
<td>179</td>
</tr>
<tr>
<td>Change from baseline (adjusted mean)</td>
<td>-44</td>
<td>-40</td>
<td>-8</td>
</tr>
<tr>
<td>Difference from placebo arm (adjusted mean)</td>
<td>-36**</td>
<td>-32** (-44, -27)</td>
<td>(-41, -23)</td>
</tr>
<tr>
<td>95% Confidence Interval</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Body Weight (kg) (Mean)

<table>
<thead>
<tr>
<th></th>
<th>VICTOZA® 1.8 mg + Metformin + Rosiglitazone</th>
<th>VICTOZA® 1.2 mg + Metformin + Rosiglitazone</th>
<th>Placebo + Metformin + Rosiglitazone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>94.9</td>
<td>96.3</td>
<td>98.5</td>
</tr>
<tr>
<td>Change from baseline (adjusted mean)</td>
<td>-2.0</td>
<td>-1.0</td>
<td>+0.6</td>
</tr>
<tr>
<td>Difference from placebo arm (adjusted mean)</td>
<td>-2.6**</td>
<td>-1.5** (-3.4, -1.8)</td>
<td>(-2.4, -1.0)</td>
</tr>
<tr>
<td>95% Confidence Interval</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4 Intent-to-treatment population using last observation carried forward
± Least squares mean adjusted for baseline value

**p-value < 0.0001

16 HOW SUPPLIED/STORAGE AND HANDLING

16.1 How Supplied

VICTOZA® is available in the following package sizes containing disposable, pre-filled, multi-dose pens. Each individual pen delivers doses of 0.6 mg, 1.2 mg, or 1.8 mg (6 mg/mL, 3 mL).

Each VICTOZA® pen is for use by a single patient. A VICTOZA® pen must never be shared between patients, even if the needle is changed.

16.2 Recommended Storage

Prior to first use, VICTOZA® should be stored in a refrigerator between 36°F to 46°F (2°C to 8°C) (Table 12). Do not store in the freezer or directly adjacent to the refrigerator cooling element. Do not freeze VICTOZA® and do not use VICTOZA® if it has been frozen.

After initial use of the VICTOZA® pen, the pen can be stored for 30 days at controlled room temperature (59°F to 86°F; 15°C to 30°C) or in a refrigerator (36°F to 46°F; 2°C to 8°C). Keep the pen cap on when not in use. VICTOZA® should be protected from excessive heat and sunlight. Always remove and safely discard the needle after each injection and store the VICTOZA® pen without an injection needle attached. This will reduce the potential for contamination, infection, and leakage while also ensuring dosing accuracy. Always use a new needle for each injection to prevent contamination.

Table 12 Recommended Storage Conditions for the VICTOZA® Pen

<table>
<thead>
<tr>
<th>Prior to first use</th>
<th>After first use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerator 36°F to 46°F (2°C to 8°C)</td>
<td>Room Temperature 59°F to 86°F (15°C to 30°C)</td>
</tr>
<tr>
<td>Refrigerated 36°F to 46°F (2°C to 8°C)</td>
<td></td>
</tr>
<tr>
<td>Until expiration date</td>
<td>30 days</td>
</tr>
</tbody>
</table>
Risk of Thyroid C-cell Tumors
Inform patients that liraglutide causes benign and malignant thyroid C-cell tumors in mice and rats and that the human relevance of this finding has not been determined. Counsel patients to report symptoms of thyroid tumors (e.g., a lump in the neck, hoarseness, dysphagia, or dyspnea) to their physician [see Boxed Warning and Warnings and Precautions (5.1)].

Dehydration and Renal Failure
Patients treated with VICTOZA® should be advised of the potential risk of dehydration due to gastrointestinal adverse reactions and take precautions to avoid fluid depletion. Patients should be informed of the potential risk for worsening renal function, which in some cases may require dialysis.

Pancreatitis
Patients should be informed of the potential risk for pancreatitis. Explain that persistent severe abdominal pain that may radiate to the back and which may or may not be accompanied by vomiting, is the hallmark symptom of acute pancreatitis. Instruct patients to discontinue VICTOZA® promptly and contact their physician if persistent severe abdominal pain occurs [see Warnings and Precautions (5.2)].

Never Share a VICTOZA® Pen Between Patients
Advise patients that they must never share a VICTOZA® pen with another person, even if the needle is changed, because doing so carries a risk for transmission of blood-borne pathogens.

Hypersensitivity Reactions
Patients should be informed that serious hypersensitivity reactions have been reported during postmarketing use of VICTOZA®. If symptoms of hypersensitivity reactions occur, patients must stop taking VICTOZA® and seek medical advice promptly [see Warnings and Precautions (5.6)].

Jaundice and Hepatitis
Inform patients that jaundice and hepatitis have been reported during postmarketing use of liraglutide. Instruct patients to contact their physician if they develop jaundice.

Instructions
Patients should be informed of the potential risks and benefits of VICTOZA® and of alternative modes of therapy. Patients should also be informed about the importance of adherence to dietary instructions, regular physical activity, periodic blood glucose monitoring and A1C testing, recognition and management of hypoglycemia and hyperglycemia, and assessment for diabetes complications. During periods of stress such as fever, trauma, infection, or surgery, medication requirements may change and patients should be advised to seek medical advice promptly.

Physicians should instruct their patients to read the Patient Medication Guide before starting VICTOZA® therapy and to reread each time the prescription is renewed. Patients should be instructed to inform their doctor or pharmacist if they develop any unusual symptom, or if any known symptom persists or worsens. Inform patients not to take an extra dose of VICTOZA® to make up for a missed dose. If a dose is missed, the once-daily regimen should be resumed as prescribed with the next scheduled dose.

If more than 3 days have elapsed since the last dose, the patient should be advised to reinitiate VICTOZA® at 0.6 mg to mitigate any gastrointestinal symptoms associated with reinitiation of treatment. VICTOZA® should be titrated at the discretion of the prescribing physician [see Dosage and Administration (2)].
What should I tell my healthcare provider before using Victoza®?

Tell your healthcare provider about all the medicines you take, including prescription and over-the-counter medicines, vitamins, and herbal supplements. The dose of Victoza® may need to be changed if you take other medicines that may affect blood sugar, including insulin or sulfonylureas.

What is the most important information I should know about Victoza®?

Victoza® may cause serious side effects, including:
- Possible thyroid tumors, including cancer. Tell your healthcare provider if you get a lump or swelling in your neck, hoarseness, trouble swallowing, or shortness of breath. These may be symptoms of thyroid cancer. In studies with rats and mice, Victoza® and medicines that work like Victoza® caused thyroid tumors, including thyroid cancer. It is not known if Victoza® will cause thyroid tumors or a type of thyroid cancer called medullary thyroid carcinoma (MTC) in people.
- Do not use Victoza® if you or any of your family have ever had a type of thyroid cancer called medullary thyroid carcinoma (MTC), or if you have an endocrine system condition called Multiple Endocrine Neoplasia syndrome type 2 (MEN 2).

What is Victoza®?

Victoza® is an injectable prescription medicine that may improve blood sugar (glucose) in adults with type 2 diabetes mellitus, and should be used along with diet and exercise.

Who should not use Victoza®?

Do not use Victoza® if:
- you or any of your family have ever had a type of thyroid cancer called medullary thyroid carcinoma (MTC) or if you have an endocrine system condition called Multiple Endocrine Neoplasia syndrome type 2 (MEN 2).
- you are allergic to liraglutide or any of the ingredients in Victoza®. See the end of this Medication Guide for a complete list of ingredients in Victoza®.

Before using Victoza®, tell your healthcare provider if you:
- have or have had problems with your pancreas, kidneys, or liver
- have severe problems with your stomach, such as slowing emptying of your stomach (gastroparesis) or problems with digesting food
- have any other medical conditions
- are pregnant or plan to become pregnant. It is not known if Victoza® will harm your unborn baby. Tell your healthcare provider if you become pregnant while using Victoza®.
- have severe problems with your stomach, such as slowed emptying of your stomach (gastroparesis) or problems with digesting food
- have or have had problems with your pancreas, kidneys, or liver
- you or any of your family have ever had a type of thyroid cancer called medullary thyroid carcinoma (MTC) or if you have an endocrine system condition called Multiple Endocrine Neoplasia syndrome type 2 (MEN 2).

How should I use Victoza®?

Victoza® is injected under the skin (subcutaneously) of your stomach (abdomen), thigh, or upper arm.

Instructions for Use

- Use Victoza® 1 time each day, at any time of the day.
- Change (rotate) your injection site with each injection.
- Do not use the same site for each injection.
- Do not mix insulin and Victoza® together.
- If you miss a dose of Victoza®, take the missed dose at the next scheduled dose. Do not take 2 doses of Victoza® at the same time.
- Victoza® may be taken with or without food.
- Do not inject Victoza® into a muscle (intramuscularly) or vein (intravenously).
- You may give an injection of Victoza® and insulin in the same body area (such as your stomach area), but not right next to each other.
- Change (rotate) your injection site with each injection. Do not use the same site for each injection.
- Do not share your Victoza® pen with other people, even if the needle has been changed.
- Your dose of Victoza® and other diabetes medicines may need to change because of:
  - change in level of physical activity or exercise, weight gain or loss, increased stress, illness, change in diet, or because of other medicines you take.

What are the possible side effects of Victoza®?

Victoza® may cause serious side effects, including:
- See “What is the most important information I should know about Victoza®?”
- Inflammation of your pancreas (pancreatitis). Stop using Victoza® and call your healthcare provider right away if you have severe pain in your stomach area (abdomen) that will not go away, with or without vomiting. You may feel the pain from your abdomen to your back.
- Low blood sugar (hypoglycemia). Your risk for getting low blood sugar may be higher if you use Victoza® with another medicine that can cause low blood sugar, such as a sulfonylurea or insulin.

Signs and symptoms of low blood sugar may include:
- dizziness or light-headedness
- sweating
- confusion or drowsiness
- headache
- blurred vision
- slurred speech
- shakiness
- fast heartbeat
- anxiety, irritability, or mood changes
- hunger
- weakness
- feeling jittery
- kidney problems (kidney failure). In people who have kidney problems, diarrhea, nausea, and vomiting may cause a loss of fluids (dehydration) which may cause kidney problems to get worse.
- serious allergic reactions. Stop using Victoza® and get medical help right away, if you have any symptoms of a serious allergic reaction including itching, rash, or difficulty breathing.
The most common side effects of Victoza® may include headache, nausea, diarrhea, vomiting, anti-liraglutide antibodies in your blood.

Talk to your healthcare provider about any side effect that bothers you or does not go away. These are not all the possible side effects of Victoza®.

Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.

General information about the safe and effective use of Victoza®:

Medicines are sometimes prescribed for purposes other than those listed in a Medication Guide. Do not use Victoza® for a condition for which it was not prescribed. Do not give Victoza® to other people, even if they have the same symptoms that you have. It may harm them.

This Medication Guide summarizes the most important information about Victoza®. If you would like more information, talk with your healthcare provider. You can ask your pharmacist or healthcare provider for information about Victoza® that is written for health professionals.

For more information, go to victoza.com or call 1-877-484-2969.

What are the ingredients in Victoza®?

Active Ingredient: liraglutide

Inactive Ingredients: disodium phosphate dihydrate, propylene glycol, phenol and water for injection

This Medication Guide has been approved by the U.S. Food and Drug Administration.
Instructions for Use
Victoza® (liraglutide) injection

First read the Medication Guide that comes with your Victoza® pen and then read these Patient Instructions for Use for information about how to use your Victoza® pen the right way. These instructions do not take the place of talking with your healthcare provider about your medical condition or your treatment.

Do not share your Victoza® Pen with other people, even if the needle has been changed. You may give other people a serious infection, or get a serious infection from them.

Your Victoza® pen contains 3 mL of Victoza® and will deliver doses of 0.6 mg, 1.2 mg or 1.8 mg. The number of doses that you can take with a Victoza® pen depends on the dose of medicine that is prescribed for you. Your healthcare provider will tell you how much Victoza® to take. Victoza® pen should be used with Novo Nordisk disposable needles. Talk to your healthcare provider or pharmacist for more information about needles for your Victoza® pen.

Important Information

△ Do not share your Victoza® pen with other people, even if the needle has been changed. You may give other people a serious infection, or get a serious infection from them.

△ Always use a new needle for each injection. Do not reuse or share your needles with other people. You may give other people a serious infection, or get a serious infection from them.

△ Keep your Victoza® pen and all medicines out of the reach of children.

△ If you drop your Victoza® pen, repeat “First Time Use For Each New Pen” (steps A through D).

△ Be careful not to bend or damage the needle.

△ Do not use the cartridge scale to measure how much Victoza® to inject.

△ Be careful when handling used needles to avoid needle stick injuries.

△ You can use your Victoza® pen for up to 30 days after you use it the first time.

First Time Use for Each New Pen

Step A. Check the Pen

• Take your new Victoza® pen out of the refrigerator.
• Wash hands with soap and water before use.
• Check pen label before each use to make sure it is your Victoza® pen.
• Pull off pen cap.
• Check Victoza® in the cartridge. The liquid should be clear, colorless and free of particles. If not, do not use.

Step B. Attach the Needle

• Remove protective tab from outer needle cap.
• Pull off outer needle cap. Do not throw away.
• Pull off inner needle cap and throw away. A small drop of liquid may appear. This is normal.

Step C. Dial to the Flow Check Symbol

This step is done only ONCE for each new pen and is ONLY required the first time you use a new pen.

• Turn dose selector until flow check symbol (→) lines up with pointer. The flow check symbol does not administer the dose as prescribed by your healthcare provider.

• To select the dose prescribed by your healthcare provider, continue to Step G under “Routine Use”.

Step D. Prepare the Pen

• Hold pen with needle pointing up.
• Tap cartridge gently with your finger a few times to bring any air bubbles to the top of the cartridge.
• Keep needle pointing up and press dose button until 0 mg lines up with pointer. Repeat steps C and D, up to 6 times, until a drop of Victoza® appears at the needle tip.

If you still see no drop of Victoza®, use a new pen and contact Novo Nordisk at 1-877-484-2869.

Continue to Step G under “Routine Use” ->

Routine Use

Step E. Check the Pen

• Take your Victoza® pen from where it is stored.
• Wash hands with soap and water before use.
• Check pen label before each use to make sure it is your Victoza® pen.
• Pull off pen cap.
• Check Victoza® in the cartridge. The liquid should be clear, colorless and free of particles. If not, do not use.
• Wipe the rubber stopper with an alcohol swab.

Step F. Attach the Needle

• Remove protective tab from outer needle cap.
• Push outer needle cap containing the needle straight onto the pen, then screw needle on until secure.
• Pull off outer needle cap. Do not throw away.
• Pull off inner needle cap and throw away. A small drop of liquid may appear. This is normal.

Step G. Dial the Dose

• Victoza® pen can give a dose of 0.6 mg (starting dose), 1.2 mg or 1.8 mg. Be sure that you know the dose of Victoza® that is prescribed for you.
• Turn the dose selector until your needed dose lines up with the pointer (0.6 mg, 1.2 mg or 1.8 mg).
• You will hear a “click” every time you turn the dose selector. Do not set the dose by counting the number of clicks you hear.
• If you select a wrong dose, change it by turning the dose selector backwards or forwards until the correct dose lines up with the pointer. Be careful not to press the dose button when turning the dose selector. This may cause Victoza® to come out.

Step H. Injecting the Dose

• Insert needle into your skin in the stomach, thigh or upper arm. Use the injection technique shown to you by your healthcare provider. Do not inject Victoza® into a vein or muscle.
• Press down on the center of the dose button to inject until 0 mg lines up with the pointer.
• Be careful not to touch the dose display with your other fingers. This may block the injection.
• Keep the dose button pressed down and make sure that you keep the needle under the skin for a full count of 6 seconds to make sure the full dose is injected. Keep your thumb on the injection button until you remove the needle from your skin.
• Change (rotate) your injection sites within the area you choose for each dose. Do not use the same injection site for each injection.

Step I. Withdraw Needle

• You may see a drop of Victoza® at the needle tip. This is normal and it does not affect the dose you just received. If blood appears after you take the needle out of your skin, apply light pressure, but do not rub the area.

Step J. Remove and Dispose of the Needle

• Carefully put the outer needle cap over the needle. Unscrew the needle.
• Safely remove the needle from your Victoza® pen after each use.
• Put your used VICTOZA® pen and needles in a FDA-cleared sharps disposal container right away after use. Do not throw away (dispose of) loose needles and pens in your household trash.
• If you do not have a FDA-cleared sharps disposal container, you may use a household container that is:
  □ made of a heavy-duty plastic
  □ can be closed with a tight-fitting, puncture-resistant lid, without sharps being able to come out
  □ upright and stable during use
  □ leak-resistant
  □ properly labeled to warn of hazardous waste inside the container
• When your sharps disposal container is almost full, you will need to follow your community guidelines for the right way to dispose of your sharps disposal container. There may be state or local laws about how you should throw away used needles and syringes. Do not reuse or share your needles with other people. For more information about the safe sharps disposal, and for specific information about sharps disposal in the state that you live in, go to the FDA’s website at: http://www.fda.gov/safesharpsdisposal.
• Do not dispose of your used sharps disposal container in your household trash unless your community guidelines permit this. Do not recycle your used sharps disposal container.

Caring for your Victoza® pen

• After removing the needle, put the pen cap on your Victoza® pen and store your Victoza® pen without the needle attached.
• Do not try to refill your Victoza® pen—it is prefilled and is disposable.
• Do not try to repair your pen or pull it apart.
• Keep your Victoza® pen away from dust, dirt and liquids.
• If cleaning is needed, wipe the outside of the pen with a clean, damp cloth.
How should I store Victoza®?

**Before use:**
- Store your new, unused Victoza® pen in the refrigerator at 36°F to 46°F (2°C to 8°C).
- If Victoza® is stored outside of refrigeration (by mistake) prior to first use, it should be used or thrown away within 30 days.
- Do not freeze Victoza® or use Victoza® if it has been frozen. Do not store Victoza® near the refrigerator cooling element.

**Pen in use:**
- Store your Victoza® pen for 30 days at 59°F to 86°F (15°C to 30°C), or in a refrigerator at 36°F to 46°F (2°C to 8°C).
- When carrying the pen away from home, store the pen at a temperature between 59°F to 86°F (15°C to 30°C).
- If Victoza® has been exposed to temperatures above 86°F (30°C), it should be thrown away.
- Protect your Victoza® pen from heat and sunlight.
- Keep the pen cap on when your Victoza® pen is not in use.
- Use a Victoza® pen for only 30 days. Throw away a used Victoza® pen after 30 days, even if some medicine is left in the pen.