Albiglutide (Tanzeum) for Diabetes Mellitus

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STEPS new drug reviews cover Safety, Tolerability, Effectiveness, Price, and Simplicity. Each independent review is provided by authors who have no financial association with the drug manufacturer.

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Albiglutide (Tanzeum) is a glucagon-like peptide 1 (GLP-1) receptor agonist labeled as an adjunct to diet and exercise for the management of type 2 diabetes mellitus in adults. As with other GLP-1 receptor agonists, albiglutide stimulates postmeal insulin secretion and slows gastric emptying to promote satiety.1 Albiglutide can be used alone or in combination with metformin, sulfonylureas, thiazolidinediones, or basal insulin.2-5 It has not been studied in combination with prandial insulin.

### SAFETY

As with other GLP-1 receptor agonists, use of albiglutide increases the risk of acute pancreatitis (0.3% with albiglutide vs. 0.1% with placebo).1 Although the risk of hypoglycemia is low (2% over one year) with albiglutide monotherapy, the risk increases when it is added to a sulfonylurea (13% over one year) or basal insulin (16% over six months).1 No dosage adjustment is needed in patients with renal dysfunction, although albiglutide should not be used in patients with end-stage renal disease.6 Renal failure has been reported in dehydrated patients. As with several other GLP-1 receptor agonists, albiglutide is contraindicated in patients with a personal or family history of medullary thyroid carcinoma, and in patients with multiple endocrine neoplasia syndrome type 2.1 Albiglutide is a U.S. Food and Drug Administration pregnancy category C drug and has not been evaluated in breastfeeding women.1 Gastrointestinal symptoms, including nausea, vomiting, diarrhea, constipation, and acid reflux, are the most common adverse effects (39% with albiglutide vs. 33% with placebo) and are most often mild.1 Injection site reactions are also more common with albiglutide than with placebo (18% vs. 8%).1 In clinical trials, 2% of patients discontinued albiglutide because of adverse effects.1

### EFFECTIVENESS

Albiglutide has not been studied to determine its effects on mortality or on macrovascular manifestations of type 2 diabetes. Used alone, albiglutide reduces A1C by 0.5 to 0.8 percentage points and fasting blood glucose by about 16 mg per dL (0.89 mmol per L).1-5 This is similar to expected reductions with glimepiride (Amaryl); sitagliptin (Januvia); pioglitazone (Actos); and liraglutide (Victoza), another GLP-1 agonist.2-5,7 In patients with renal impairment, albiglutide has superior A1C reduction compared with sitagliptin.8 Albiglutide retains its effectiveness when used with basal insulin or oral therapies, with A1C reduction similar to

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dosage</th>
<th>Dose form</th>
<th>Cost*</th>
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<tbody>
<tr>
<td>Albiglutide (Tanzeum)</td>
<td>30 mg once per week initially, and increased to 50 mg once per week if needed to improve A1C</td>
<td>30-mg and 50-mg pens for subcutaneous injection</td>
<td>$500</td>
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### TOLERABILITY

Overall, albiglutide is well tolerated, with adverse effect rates similar to placebo.

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monotherapy.\textsuperscript{2-5} Patients taking albiglutide will have an average weight loss of 0.4 to 1.1 kg (14 oz to 2 lb, 3 oz) by one year.\textsuperscript{4,5}

**PRICE**

A 30-day supply of albiglutide (four 30-mg or 50-mg injections) will cost about $500, which is similar to other GLP-1 receptor agonists. None of the five medications in this class is available generically, and a patient’s third-party formulary should be investigated before prescribing.

**SIMPPLICITY**

Albiglutide is administered by subcutaneous injection, once weekly with or without food, beginning with the 30-mg dose and increasing to 50 mg if needed to improve A1C. Patients will need to prepare the product 15 to 30 minutes before injection using supplied materials and instructions.

**Bottom Line**

Reductions in A1C are less with albiglutide than with the first-line therapy metformin, and albiglutide costs significantly more than metformin and sulfonylureas. Albiglutide’s ability to reduce diabetes-related morbidity and major cardiovascular events is unknown. Like other GLP-1 agonists, albiglutide may provide some A1C benefit as an adjunct with a low risk of adverse effects. Albiglutide’s once-weekly dosing may be useful for patients with compliance challenges. Until more is known regarding long-term patient-oriented outcomes, albiglutide should be used only as a second- or third-line agent in patients who are comfortable giving themselves an injection and desire once-weekly treatment.

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