

## SUPPLEMENTARY DATA

### Supplementary Table 1. Insulin Treatment Protocols:

#### 1.A. Sitagliptin Group

Discontinue oral antidiabetic drugs or low-dose insulin on admission.
Sitagliptin once daily - Dosage
<ul style="list-style-type: none"><li>• 100 mg/day (at any time of day) for patients with GFR 50–100 ml/min</li><li>• 50 mg/day for patients with GFR 30–50 ml/min</li></ul>
Supplemental (correction) insulin:
<ul style="list-style-type: none"><li>• Give supplemental insulin lispro following the “sliding scale” protocol (1D) for blood glucose &gt; 140 mg/dl.</li></ul>
<ul style="list-style-type: none"><li>• If a patient is able and expected to eat all, give supplemental lispro insulin before each meal and at bedtime following the “usual” column.</li></ul>
<ul style="list-style-type: none"><li>• If a patient is not able to eat, give supplemental lispro insulin every 6 hours (6-12-6-12) following the “sensitive” column.</li></ul>
Insulin adjustment:
<ul style="list-style-type: none"><li>• If the fasting and pre-meal plasma glucose are persistently &gt;140 mg/dl in the absence of hypoglycemia, the insulin scale of lispro insulin could be increased from sensitive to usual, or to usual to resistant scale</li></ul>
<ul style="list-style-type: none"><li>• If a patient develops hypoglycemia, the sliding scale of lispro insulin should be decreased from insulin resistant to usual scale or from usual to sensitive scale.</li></ul>
Blood glucose monitoring:
<ul style="list-style-type: none"><li>• Measure BG before each meal and at bedtime (or every 6 hours if a patient is not eating) using a glucose meter. In addition, measure BG at any time if a patient experiences symptoms of hypoglycemia.</li></ul>

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### 1.B. Sitagliptin plus Glargine Group.

Discontinue oral antidiabetic drugs or low-dose insulin on admission.
Sitagliptin once daily - Dosage
<ul style="list-style-type: none"> <li>• 100 mg/day (at any time of day) for patients with GFR 50–100 ml/min</li> <li>• 50 mg/day for patients with GFR 30–50 ml/min</li> </ul>
Glargine once daily - starting daily dose:
<ul style="list-style-type: none"> <li>• Patients with BG between 140-200 mg/dL= 0.2 units per kg weight per day.</li> <li>• Patients with BG between 201-400 mg/dL= 0.25 units per kg weight per day.</li> <li>• Glargine insulin will be given once daily, at the same time of the day.</li> <li>• Patients will receive the full-dose of glargine insulin (even if NPO) except for those that have GFR &lt;50 ml/min. Patients with GFR &lt;50ml/min will receive only ½ of the calculated insulin dose.</li> </ul>
Supplemental (correction) insulin:
<ul style="list-style-type: none"> <li>• Give supplemental insulin lispro following the “sliding scale” protocol (1D) for blood glucose &gt; 140 mg/dl.</li> <li>• If a patient is able and expected to eat all, give supplemental lispro insulin before each meal and at bedtime following the “usual” column.</li> <li>• If a patient is not able to eat, give supplemental lispro insulin every 6 hours (6-12-6-12) following the “sensitive” column.</li> </ul>
Daily insulin adjustment:
<ul style="list-style-type: none"> <li>• Fasting and pre-meal BG between 100-140 mg/dl without hypoglycemia the previous day: no change</li> <li>• Fasting and pre-meal BG between 141-180 mg/dl: increase glargine dose by 10% every day</li> <li>• Fasting and pre-meal BG &gt;180 mg/dl: increase glargine dose by 20% every day</li> <li>• Fasting and pre-meal BG between 70-99 mg/dl: decrease glargine dose by 10% every day</li> <li>• If a patient develops hypoglycemia (BG &lt;70 mg/dL), decrease glargine dose by 20%.</li> <li>• If a patient develops hypoglycemia (BG &lt;40 mg/dL), decrease glargine dose by 30-40%.</li> </ul>
Blood glucose monitoring:
<ul style="list-style-type: none"> <li>• Measure BG before each meal and at bedtime (or every 6 hours if a patient is not eating) using a glucose meter. In addition, measure BG at any time if a patient experiences symptoms of hypoglycemia.</li> </ul>

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### 1.C. Basal Bolus Insulin Regimen

Discontinue oral antidiabetic drugs or low-dose insulin on admission.
Starting total daily insulin dose:
<ul style="list-style-type: none"><li>• Patients with BG between 140-200 mg/dL= 0.4 units per kg weight per day.</li></ul>
<ul style="list-style-type: none"><li>• Patients with BG between 201-400 mg/dL= 0.5 units per kg weight per day.</li></ul>
<ul style="list-style-type: none"><li>• Half of total daily dose will be given as glargine and half as lispro/aspart.</li></ul>
<ul style="list-style-type: none"><li>• Glargine insulin will be given once daily, at the same time of the day. Patients will receive the full-dose of glargine insulin (even if NPO) except for those that have GFR &lt;50 ml/min. Patients with GFR &lt;50ml/min will receive only ½ of the calculated insulin dose.</li></ul>
<ul style="list-style-type: none"><li>• Insulin lispro will be given in three equally divided doses before each meal. To prevent hypoglycemia, if a subject is not able to eat, the dose of lispro will be held. Patients with GFR &lt;50ml/min receive ½ of the calculated insulin dose.</li></ul>
Daily insulin adjustment:
<ul style="list-style-type: none"><li>• Fasting and pre-meal BG between 100-140 mg/dl without hypoglycemia the previous day: no change</li></ul>
<ul style="list-style-type: none"><li>• Fasting and pre-meal BG between 141-180 mg/dl: increase glargine dose by 10% every day</li></ul>
<ul style="list-style-type: none"><li>• Fasting and pre-meal BG &gt;180 mg/dl: increase glargine dose by 20% every day</li></ul>
<ul style="list-style-type: none"><li>• Fasting and pre-meal BG between 70-99 mg/dl: decrease glargine dose by 10% every day</li></ul>
<ul style="list-style-type: none"><li>• If a patient develops hypoglycemia (BG &lt;70 mg/dL), decrease glargine dose by 20%.</li></ul>
<ul style="list-style-type: none"><li>• If a patient develops hypoglycemia (BG &lt;40 mg/dL), decrease glargine dose by 30-40%.</li></ul>
Supplemental (correction) insulin:
<ul style="list-style-type: none"><li>• Give supplemental insulin lispro following the “sliding scale” protocol (1D) for blood glucose &gt; 140 mg/dl.</li></ul>
<ul style="list-style-type: none"><li>• If a patient is able and expected to eat all, give supplemental lispro insulin before each meal and at bedtime following the “usual” column.</li></ul>
<ul style="list-style-type: none"><li>• If a patient is not able to eat, give supplemental lispro insulin every 6 hours (6-12-6-12) following the “sensitive” column.</li></ul>
Blood glucose monitoring:
<ul style="list-style-type: none"><li>• Measure BG before each meal and at bedtime (or every 6 hours if a patient is not eating) using a glucose meter. In addition, measure BG at any time if a patient experiences symptoms of hypoglycemia.</li></ul>

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**1.D. Supplemental Lispro Insulin Scale**

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blood Glucose (mg/dL)	Insulin Sensitive	Usual	Insulin Resistant
>141-180	2	4	6
181-220	4	6	8
221-260	6	8	10
261-300	8	10	12
301-350	10	12	14
351-400	12	14	16
> 400	14	16	18

\*\* Check appropriate column below and cross out other columns

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**Supplementary Figure 1.** Mean daily glucose concentration in patients with randomization BG <180 mg/dl (1A) and BG ≥180 mg/dl (1B) treated with sitagliptin, sitagliptin plus basal insulin and basal bolus.

