

Guidelines for Using Rapid-acting Insulin Analogs for Hospitalized Adult Patients with Diabetes Mellitus: Lispro (Humalog®) or Aspart (Novolog®) or Glulisine (Apidra®) Insulins

1. Background

- Lispro and Aspart are rapid-acting analogs of human insulin and work more quickly than Regular insulin to lower blood glucose
- Very quick onset of action, usually 10 to 15 minutes, and lasts about 4 hours
- Should be used with a basal insulin, such as NPH, glargine, Ultralente, or Lente
- Only administer subcutaneously
- Can be given to correct pre-meal hyperglycemia and to provide insulin to cover the post-meal glucose rise
- Administer 5 to 15 minutes before a meal but can be given up to 20 minutes after the start of a meal for patients with uncertain appetite or erratic food consumption
- Should be given in the hospital only after the meal has been served, i.e. food is in front of patient ready to be consumed
- Some patients use carbohydrate counting to determine dose to cover post-meal glucose rise; for insulin-sensitive patients start with 1 unit per 15 grams carbohydrate and for less insulin-sensitive patients use 1 unit per 10 grams carbohydrate

2. Contraindications

- Patients who are NPO
- Patients with severe gastroparesis
- Do not substitute for Regular insulin

3. Indications

- Patients using this insulin for meals and/or sliding scale at home
- Per Endocrinology recommendation

4. Supplemental (sliding scale) Lispro or Aspart insulins to be administered in addition to scheduled insulin to correct pre-meal hyperglycemia

- **Low dose algorithm** (for patients using <40 units insulin daily)
Add 1 unit if pre-meal BG 150-199mg/dl
Add 2 units if pre-meal BG 200 – 249
Add 3 units if pre-meal BG 250 – 299
Add 4 units if pre-meal BG 300 – 349
Add 5 units if pre-meal BG >349
- **Medium dose algorithm** (for patients using 40 to 80 units insulin daily)
Add 1 unit if pre-meal BG 150-199mg/dl
Add 3 units if pre-meal BG 200 – 249
Add 5 units if pre-meal BG 250 – 299
Add 7 units if pre-meal BG 300 – 349
Add 8 units if pre-meal BG >349
- **High dose algorithm** (for patients using >80 units insulin daily)
Add 2 unit if pre-meal BG 150-199mg/dl
Add 4 units if pre-meal BG 200 – 249
Add 7 units if pre-meal BG 250 – 299
Add 10 units if pre-meal BG 300 – 349
Add 12 units if pre-meal BG >349