Therapeutic Interchange for Insulin

Ordered As	Substitute
Rapid-acting	
insulin aspart (Novolog) ***Insulin aspart (Fiasp)*** ***insulin glulisine (Apidra)*** ***insulin lispro (Admelog)***	***insulin lispro vial (Humalog)*** on a 1:1 unit:unit basis
Short-acting	
regular insulin (Novolin R)	***regular insulin (Humulin R)*** on a 1:1 unit:unit basis
CONCENTRATED regular insulin (Humulin R U-500)	Only to be used for refilling patient's home insulin pump, otherwise must be converted to basal/bolus If not for insulin pump, RPh will: 1. Confirm home U-500 dose 2. Obtain answers to the following questions: a. Has the patient experienced hypoglycemia event recently on home dose? i. YES/NO b. Has the patient had compliance issues with home U-500 insulin regimen? i. YES/NO 3. If the answer is NO (#2.a.i) and NO (#2.b.i) – use conversion of 50% of U-500 insulin to basal and bolus regimen. Also, calculate the dose that 0.6 units/kg would provide to verify that the patient's dose is a realistic dose. a. EXAMPLE: if patient is on total of 300 units of U-500 insulin at home i. Total calculated conversion = 300 x 0.5 = 150 units ii. Calculated Basal (Lantus dose): 75 units at bedtime (1/2 of 150 units) iii. Calculated Mealtime Bolus (Humalog dose): 75 units/3 then 3 times daily = 25 units TID with meals iv. Add comment that patient was on U-500 insulin at home 4. If the answer is YES to either question – contact prescribing physician and recommend a starting dose of 0.6 units/kg divided half basal and bolus a. EXAMPLE: Patient weight is 150 kg.

	Calculated dose is 0.6 units/kg = 90 units TOTAL i. Calculated Basal (Lantus dose) = 45 units (1/2 of 90 total units) ii. Calculated Mealtime Bolus (Humalog dose): 45 units/3 then 3 times daily = 15 units TID with meals 5. If a patient is unable to answer assessment questions, select between lower of doses (0.6 units/kg and 50% of home dose) 6. If a patient is NPO for a procedure, contact physician and recommend only basal dose (based on formula above) with sliding scale 7. Pharmacists put in an Ad hoc note to document 8. If prescriber needs assistance to convert patient back to home U-500 regimen on discharge, they can request this from pharmacist
Intermediate-acting	
isophane insulin (Novolin N)	***isophane insulin (Humulin N)*** on a 1:1 unit:unit basis
Long-acting	
insulin detemir (Levemir)	**Insulin glargine (Lantus)** Human 100 units/10 mL vial on 1:1 unit:unit basis** A lower dose may be needed
insulin degludec (Tresiba 200 U/mL and 100 U/mL FlexTouch Pens)	**Insulin glargine (Lantus)** Human 100 units/10 mL vial **Decrease dose by 20% when transitioning to insulin glargine If converting from Tresiba <80 units/day, administer once daily If converting from Tresiba >80 units/day, divide and administer twice daily
Insulin glargine (Toujeo 300 U/mL)	**Insulin glargine (Lantus)** Human 100 units/10 mL vial **Use 80% of the dose of **Toujeo** (eg, 20% reduction)
Insulin glargine (Basaglar)	**Insulin glargine (Lantus)** Human 100 units/10 mL vial on 1:1 unit:unit basis
Insulin Mixtures	
insulin aspart protamine 70% and insulin aspart 30% (Novolog 70/30)	**Insulin lispro protamine 75% and insulin lispro 25% (Humalog 75/25)** on a 1:1 unit:unit basis
isophane insulin 70% and regular insulin 30% (Novolin 70/30)	**isophane insulin 70% and regular insulin 30% (Humulin 70/30)** on a 1:1 unit:unit basis

**Conversion FROM once-daily Lantus TO once-daily Toujeo: May be substituted on an equivalent unit-per-unit basis*

***Insulin glargine syringes are drawn up in IV room from vials to specific unit dose*

References

1. Clinical Resource, ***How to Switch Insulin Products. Pharmacist's Letter/Prescriber's Letter.*** August 2019.
2. Tresiba (insulin degludec) injection package insert. Plainsboro, NJ: Novo Nordisk Inc.; 2015 Sep. http://www.novo-pi.com/tresiba.pdf.
3. Lantus (insulin glargine [rDNA origin] injection) solution for subcutaneous injection package insert. Bridgewater, NJ: Sanofi-Aventis U.S. LLC; 2015 July. http://products.sanofi.us/lantus/lantus.html.