

Helping Patients with Diabetes

Intercurrent Illness – Sick Day Rules

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Objectives

- Increase your ***awareness*** of
 - the impact of an intercurrent illness or injury can have on the glycemic management of your patients with diabetes
 - the need to follow-up on your patients with diabetes regarding their glycemic management when they experience an intercurrent event or illness
 - available treatments and tools to help you help your patients with diabetes during an intercurrent illness, procedure or medical event
 - Sick day rules (hydration, nutrition)
 - Sick day insulin coverage
 - Surgery
 - Steroid (glucocorticoid)-induced hyperglycemia

Intercurrent Illness

- During an illness or infection stress hormones & inflammatory cytokines cause higher blood glucose levels.
 - In people without diabetes, their pancreas will release extra insulin to cope with the extra blood glucose.
 - In people with diabetes – need to help compensate for the release of this extra glucose - this presents an unwanted extra difficulty in managing the rise in blood glucose levels – in addition to feeling less than 100%.
- During an illness people with diabetes should:
 - Keep a track of blood sugar levels - it's recommended to test more often than usual.
 - Stay hydrated.
 - High blood glucose levels can lead to dehydration (worsening glycemia, AKI, ketosis, etc.), so it is important to regularly drinking fluids to stay hydrated.
 - Keep eating
 - Not eating while unwell could lead to more ketones as the body may need to break down fat to make fuel. (ketone formation already promoted by stress hormones & inflammation)
 - If eating is difficult, or if vomiting and cannot keep food down, it is advisable to have drinks containing carbohydrate instead of meals
- After illness blood glucose levels may take a few days to stabilize.

Infection/Illness in PWD --- concerns:

- Worsening of diabetes (blood sugar issues) - ***preventable/actionable***
- Being ill can make it more difficult to manage diabetes.
 - **Hypoglycemia** - If a patient has severe malaise or loss of appetite or nausea/vomiting and is ***unable to eat*** → can cause **glucose levels to fall** and/or lead to **dehydration**
 - **Hyperglycemia** - Illness itself can increase insulin resistance and **raise blood glucose levels**.
 - **Increased insulin requirements** and/or **dehydration**
 - People with diabetes, **both type 1 and 2**, have a higher risk for **diabetic ketoacidosis (DKA)** when ill with an infection — (that can worsen impaired immune function, electrolyte and fluid imbalance)
 - **Stop SGLT2i** (at first sign of illness and/or reduced food intake)
 - Can take 3-4 days for effect to wane (exacerbate stress & starvation ketosis)

Infection/Illness in PWD – Worsening of diabetes:

- **Hyperglycemia** & higher risk for **diabetic ketoacidosis (DKA)** when ill with a viral infection or other illness
 - Patients who are feeling sick need to **monitor their glucose more frequently** – even every 2 to 4 hours
 - They should **continue taking their diabetes medications, *unless instructed otherwise*** by their providers
 - Based on what we know about risk of DKA with ketogenic diet and surgical stress with SGLT2i meds – **stop SGLT2i** (time will tell for which illnesses need to stop vs continue)
 - if **patient is sick – at first sign of illness** (3-4 days for effect to wear off)
 - May then need to **add Insulin** to control blood glucose levels
 - if **unable to eat**
 - May or may not need an alternative diabetes med – closely monitor
 - If **patient on both insulin and SGLT2i**, and gets sick, unable to eat or needs to limit food → **STOP the SGLT2i first** before reduce or stop insulin
 - if reduce/stop the insulin and not the SGLT2i then much higher **risk for DKA** during stress of illness or reduced carb intake

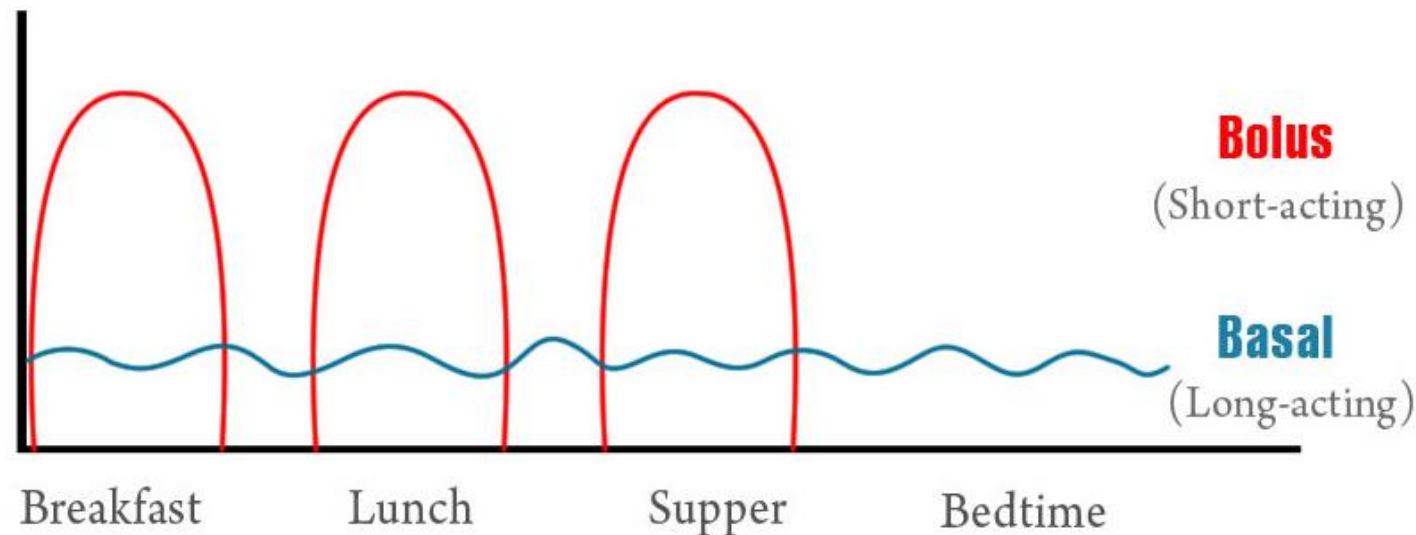
Infection/Illness in PWD – preventing high BGs/DKA:

- **Preventing severe hyperglycemia / DKA**
 - If sick & reduced intake, N/V/D, – **hold SGLT2i, Metformin, GLP1-RA, ~SUs**
 - No one knows what to do with once weekly meds
 - May need to **add “sick day” insulin**
 - ***Adjust Basal Insulin & add “correction insulin”*** for current users
 - **Instructing patients *new to insulin*** – consider
 - Use pens, if possible, for simplicity
 - Tele-video visit to instruct and help monitor/adjust if possible
 - Phone call to instruct (maybe you-tube for visual) & monitor/adjust
 - **Calculating Insulin doses in patients *new to insulin***
 - ***Basal Insulin & Correction Insulin***

Basal Insulin – suppresses glucose production between meals & overnight to maintain blood glucose in normal range when not eating - ~ 50% of daily needs

Bolus (mealtime, prandial) Insulin – limits hyperglycemia after meals – ~50% of daily needs with 10 to 20% of total daily insulin requirement as rapid-acting insulin at each meal – should *hold if NPO or not eating*

Correction Insulin – *extra rapid-acting insulin given for high blood glucose* to reduce BG to target range



Infection/Illness in PWD – preventing high BGs/DKA:

- **Adding “sick day” insulin - Basal Insulin**
 - Calculate **starting doses of insulin**
 - $0.5\text{-}0.7\text{u/kg}$ = Starting **Total Daily Dose** or
 - $0.25\text{u} \times \text{weight in pounds}$ = Starting Total Daily Dose
 - E.g., 100 kg patient = 50 - 70 units or 220 pounds = 55 units = estimated TDD
 - Start with $\frac{1}{2}$ as **Basal Insulin** - e.g., 25-35 units insulin glargine
 - If patient sick & has increased insulin resistance ***may need to rapidly increase dose*** - need to monitor & **adjust based on FBS** –
 - Call patient daily or algorithm for patient/caregiver
 - Start with 20% increase if BG in 200s, 30% increase if BGs in 300s
 - May need to double dose or even more if severe insulin resistance
 - With insulin glargine – split dose to BID if $> 50\text{u}$ per injection
 - Can use NPH BID
 - 50% AM and 50% PM if not eating (e.g., start at 15u BID for 100 kg patient)
 - $\frac{2}{3}$ AM and $\frac{1}{3}$ PM if eating

Infection/Illness in PWD – preventing high BGs/DKA:

- **Adding “sick day” insulin**
 - Calculate **starting doses of insulin**
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 - $0.25\text{u} \times \text{weight in pounds}$ = Starting Total Daily Dose
 - E.g., 100 kg patient = 50 - 70 units or 220 pounds = 55 units (estimated TDD)
 - **Bolus (mealtime) Insulin** - if eating meals add 10-20% of starting dose as rapid-acting insulin with each meal – ***hold if not eating***
 - e.g., 5-10 units before each meal if use 50 units as starting total dose for 100 kg patient
 - **Correction Insulin** - Intended to ***decrease BG*** levels to target range – based on patient’s “sensitivity or correction factor” -can be used to:
 - add more insulin to a mealtime bolus to correct for a high premeal blood glucose
 - **Used alone to correct a high blood glucose outside of mealtime or if NPO or illness**
 - Can add to current oral meds and/or basal insulin to cover hyperglycemia due to illness or medical event

Calculating the Correction Dose

$$\text{Correction dose of Insulin} = \frac{\text{Current BG} - \text{Target BG}}{\text{CF}}$$

Correction Factor (CF) or Sensitivity Factor (SF)

The CF = the mg/dl drop in BG caused by 1 unit of insulin
(depends on sensitivity to insulin - weight, age renal function)

The right correction dose will return the BG to within
30 mg/dl of the target blood glucose about **3-4 hours**
after the dose is injected

Calculating a Correction Factor(CF)/Sensitivity Factor(SF)

For patient new to insulin/sick day insulin
calculate by using
3000/weight in Kg

or - If patient already
treated with insulin can
Use 1700/TDD*

e.g., patient weighs 100 kg
3000/100kg=30
1u should reduce BG by 30 points

If impaired renal function/older age – will need “weaker” correction dose by using
larger CF (SF) number (e.g., 50 – 1u lowers BG 50 points vs 30 points)

This gives **less insulin** as the correction dose of insulin

With severe IR/infection, may need to go to “stronger” correction dose by using
smaller CF (SF) number (e.g., 20 - 1u lowers BG 20 points vs 30 points)

This gives **more insulin** as the correction dose of insulin

Quick “cheat sheet” for Correction Factor(CF)/Sensitivity Factor(SF)

CF based on patient weight

- <60 lb. = 100
- 60—80 lb. = 75
- 81—100 lb. = 60
- 101—120 lb. = 50
- 121—140 lb. = 45
- 141—170 lb. = 40
- 171—200 lb. = 30
- 201—230 lb. = 25
- 231—270 lb. = 20
- >270 lb. = 15

Based on 3x ICR weight formula

Example for Using Correction Insulin for Illness

- During illness aim for blood glucose in **110-180 range (target ~140)**
 - Therefore, you might use **target BG of 140** for 110-180 range
 - If high risk of low BG aim for 140-180 range (target BG 160)
- Example of Correction dose calculation for CF 30
 - [**current BG-target BG/CF**] – e.g., Current BG is 350 and target is ~140
 - $350-140/30 = 210/30 = 7\text{u}$ correction dose of rapid acting insulin to bring BG down 210 points
 - If this does not bring glucose down to target range – you can **strengthen the CF** to increase the correction dose: $210/25 = 8\text{u}$; $210/20 = 10.5\text{u}$; $210/15 = 14\text{u}$
 - Can give patient a **correction scale**: e.g., for BG 180-210 1u; BG 211-240 2u; BG 241-270 3u, 271-300 4u, BG 301-330 5u, etc.
 - See cheat sheet to copy and paste for different CF values

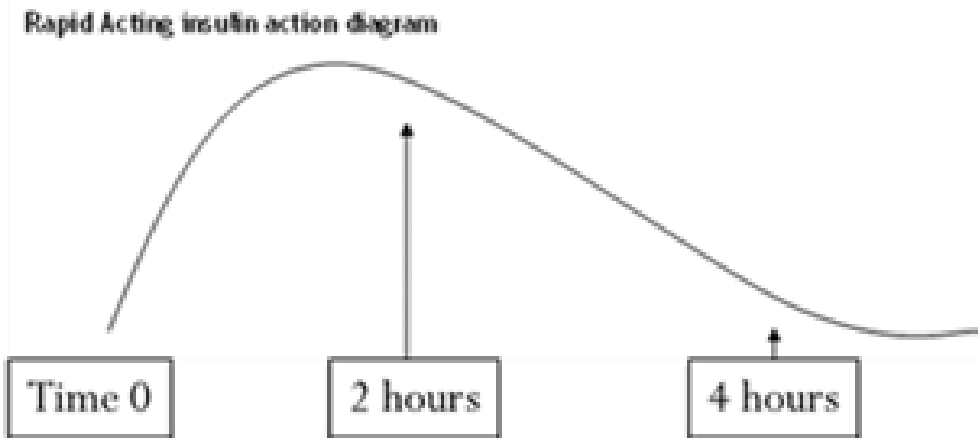
Correction Scales for different Correction Factors for Illness

- **CF 50:** for BG 180-230 give 1u; 231-280 2u; 281-330 3u; 331-380 4u; 381-410 5u; 411-460 6u; 461-510 7u, etc.
- **CF 40:** for BG 180-220 give 1u; 221-260 2u; 261-300 3u, 301-340 4u, 341-380 5u, 381-420 6u, 421-460 7u, 461-500 8u, 501-540 9u, etc.
- **CF 30:** for BG 180-210 give 1u; 211-240 2u; 241-270 3u; 271-300 4u; 301-330 5u; 331-360 6u; 361-390 7u; 391-420 8u; 421-450 9u, etc.
- **CF 25:** for BG 175-200 give 1u; 201-225 2u; 226-250 3u; 251-275 4u; 276-300 5u; 301-325 6u; 326-350 7u; 351-375 8u; 376-400 9u, etc.
- **CF 20:** for BG 180-200 1u; 201-220 2u; 221-240 3u; 241-260 4u, etc. OR
 - BG 180-220 give 2u; 221-260 4u; 261-300 6u, 301-340 8u, 341-380 10u, 381-420 12u, 421-460 14u, 461-500 18u, 501-540 18u, etc.

Guide for Using Correction Insulin

Only give (dose) **Correction Insulin**

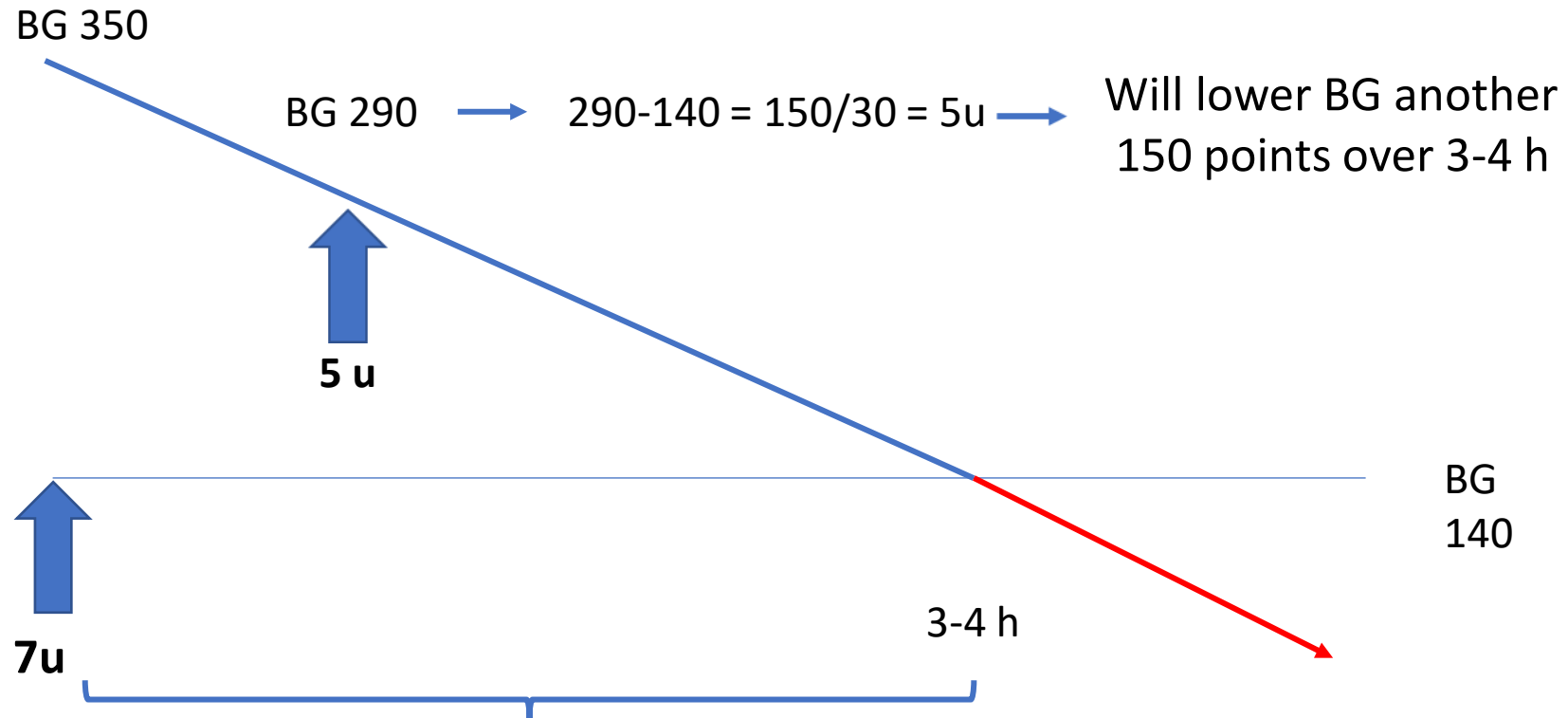
- every **3-4 hours for analog insulin** –
- every **4-6 hours for Regular insulin** –
- otherwise end up **“stacking” insulin** and risk of low BG
 - Explain it takes Fast Insulin 3-4 hours to **finish working**



Can give Meal insulin
every time you eat since
this is covering ingested carbs –
but
Correction insulin should
usually only be given
every 3-4 hours

“Stacking” Correction Doses

Correction dose: $350 - 140 = 210 / 30 = 7$ units



7u will lower BG 210 points over 3-4 hours

It takes an average of 4 hours for rapid insulin to *finish* working

Infection/Illness in PWD -- Worsening of diabetes

- **Hypoglycemia** – usually due to *reduced food intake* or some *GI viruses*
 - Check blood sugar more often – instruct based on risk
 - May need to reduce or stop sulfonylureas
 - May need to reduce insulin
 - Treat low blood sugar - *need to know how to treat low BG before it happens*
 - Rapid glucose
 - If low (blood sugar below 70 mg/dl or target range), eat 15 grams of simple carbs that are easy to digest like glucose tabs, honey, jam, Jell-O, hard candy, popsicles, juice or regular soda, and re-check BG in 15 minutes to make sure levels are rising.
 - Glucagon rescue – sick day use (low dose glucagon)
 - Kit
 - Pre-filled syringe
 - Nasal

Meal Planning on Sick Days – Sick Day Rules

If able to eat meals

- Eat usual meals
- Drink **eight (8) ounces of *calorie-free extra fluids each hour*** throughout the day
- Examples:
 - water
 - tea
 - broth
 - diet soda
 - sugar-free Jell-O

If not able to eat usual meals

- Try eating or drinking food or beverage items with **15 *grams carbohydrate every hour*** (see list next slide)
- Continue to drink ***extra calorie-free fluids*** in between

Critical to avoid dehydration

Foods/Fluids that contain 15 grams of Carbohydrate

- 1/2 cup apple juice
- 1 double-stick popsicle
- 1/4 cup regular pudding
- 1 slice dry toast
- 1/2 cup cooked cereal
- 6 saltine crackers
- 1 cup soup
- 1/2 cup regular soft drink (caffeine-free)
- 1/3 cup frozen yogurt
- 1 cup Gatorade
- 1/2 cup regular ice cream
- 1/4 cup sherbet
- Milkshake (1/3 cup low fat milk and 1/4 cup ice cream)
- 1/2 cup regular gelatin/Jell-O
- 1 cup nonfat, sugar-free yogurt (not frozen)



Sick Day Rules - Maintain Hydration

- **Eight ounces (8 oz) of fluid each hour**
 - If not eating can add in fluids containing carbs
 - e.g., 4 oz Regular Sprite + 4 oz Diet Sprite or 8 oz Gatorade
- ***Every third hour*, consume eight ounces (8 oz) of a sodium-rich choice such as bouillon**
- If having trouble keeping fluids down, ***have small sips every 15 minutes or so throughout the day to avoid dehydration***

Intercurrent Illness – Surgery

- Perioperative risk assessment for risk of ischemic heart disease or renal failure
- A1c target <8% if possible, for elective surgeries
- Perioperative glucose target range 100-180 mg/dL
- Metformin held the day of surgery
- **SGLT2i** held 3-4 days before surgery
- Hold any other oral diabetes meds the morning of surgery/procedure
- If patient taking insulin –
 - Give ½ of AM NPH dose or 75-80% of long-acting basal insulin (or pump basal rate)
- Monitor BG at least every 2-4 hours while NPO & use short or rapid acting insulin to cover (correction insulin) as needed.
- There is no data on the use or influence of once weekly GLP1 RA or ultra-long insulin in perioperative period

How Do You Guide Your Patients with Diabetes when they are Treated with Steroids (glucocorticoids)?

- First, it is important to evaluate the
 - the patient's clinical condition (acute illness may result in “*stress hyperglycemia*” independent of steroid administration)
 - the degree of hyperglycemia
- Second, it is essential to determine the type, dose, and frequency of administration of the corticosteroid compound.
- Third, differentiate between **temporary** and **indefinite** treatment with glucocorticoids (e.g., Medrol dose pack vs Prednisone QD for RA)
- Fourth, recognize the mechanism of action, pharmacokinetics, and pharmacodynamics of various hypoglycemic drugs.

All these aspects influence the selection and schedule of hypoglycemic measures, as well as the goals set in terms of glycemic control.

Use of Steroids (glucocorticoids)

- In the outpatient population,
 - 40% of steroid use is for *respiratory disease* [e.g., asthma, COPD], with most of the rest being used in *musculoskeletal* [e.g., RA, SLE or intra-articular] and *cutaneous diseases*, and conditions requiring *immunosuppression* [and chemotherapy]
 - Steroids may be administered by various regimes and in variable doses and may **cause hyperglycemia when administered at supraphysiological doses by any route** (*topical, oral, inhaled, intramuscular, intravenous, or intra-articular*)
 - Most steroid use is for *less than 5 days*, but 22% is for *greater than 6 months* and 4.3% for *longer than 5 years*

DX -Glucocorticoid (Steroid) Induced Hyperglycemia or Diabetes

- The use of steroid treatment in people with preexisting diabetes will undoubtedly result in **worsening glucose control**; this may be termed steroid-induced hyperglycemia.
 - This will warrant temporary additional and more active glycemic management.

Increase in insulin resistance with increased hepatic glucose production and inhibition of the production and secretion of insulin by pancreatic β -cells

- In patients treated with most glucocorticoids, measuring **fasting blood glucose** can **underestimate** glucocorticoid-induced hyperglycemia and diabetes, particularly in intermediate-acting treatments that are administered in single morning doses.
 - Glucocorticoids cause predominantly postprandial hyperglycemia

Use of Steroids (glucocorticoids)

- A single or short course of [oral] steroid (e.g., prednisolone) in the morning may be the *commonest mode* of administration.
 - In susceptible patients, this will often result in **a rise in blood glucose by late morning** that continues into the evening (**~4 to 8 hours following the administration of oral steroids**)
 - *Postprandial glycemia after lunch* offers the greatest diagnostic sensitivity.
 - Overnight the blood glucose generally falls back, often to baseline levels the next morning.
- Characterized by high initial glucocorticoid doses and a *rapid or gradual reduction* as the underlying disease ameliorates
 - can lead to initial moderate to severe hyperglycemia with rapid changes in glycemia in response to changes in the glucocorticoid dose.

Use of Steroids (glucocorticoids) – Insulin Therapy

- ***Insulin is usually the treatment of choice*** because of its efficacy and safety.
 - Insulin provides an immediate onset of action, an unlimited glucose lowering power, and can be easily titrated.
- **Morning administration** of basal **human insulin (Humulin or Novolin N)** may closely fit the glucose excursion induced by a single dose of oral steroid in the morning (both peak ~ 4-6 hours after administration)
 - E.g., start with 10 units of basal human (NPH) insulin with a daily dose increase of between 10% and 20%, titrated to the blood glucose level
 - dose increments of up to 40% have been shown to be required in some individuals
- ADA recommendations – [with] “once-or twice-daily steroids, administration of **NPH is standard approach** (because *NPH action peaks at 4-6h after administration it is best to give it concomitantly with steroids*) – **[can be] administered in addition to daily basal-bolus insulin or in addition to oral anti-diabetic medications**”

Use of Steroids (glucocorticoids) - Insulin therapies

- **Basal analogue insulin** may be appropriate if hyperglycemia is present throughout the day and into the evening (especially for long-acting glucocorticoids such as dexamethasone & multidose or continuous glucocorticoid use)
 - Care should be taken to identify and protect against ***nocturnal and early morning hypoglycemia*** if insulin glargine, insulin detemir or insulin degludec are used in this context.
- ADA- “For higher doses of glucocorticoids, increasing doses of **prandial & correction insulin**, often in extra-ordinary amounts, are often needed in addition to basal insulin”
- ***Changes in the dosage of glucocorticoids require parallel and proportional adjustments of the insulin dose.***
 - In the outpatient setting, it is essential to instruct the patient and/or the patient's family regarding how to adjust the dose of insulin according to glycemia and changes in the dose of glucocorticoids

Estimation of the Initial Dose of Insulin in Glucocorticoid- Induced Hyperglycemia, According to the Type and Dose of Glucocorticoids

Prednisone dose, mg/day	Dexamethasone dose, mg/day	Insulin NPH, glargine/detemir dose, IU/kg/day
≥40	≥8	0.4
30	6	0.3
20	4	0.2
10	2	0.1

Pearls for Patients with T2D currently on Insulin when Glucocorticoid Therapy Initiated

- Type 2 diabetes on insulin therapy
 - Pre-mixed insulin regimen → An increase in the morning insulin dose may be effective in reducing steroid induced hyperglycemia.
 - Basal-bolus → An increase in the lunch and evening meal short acting boluses may be appropriate.
 - If on basal insulin consider switching to morning administration and increase dose in 2 to 4 unit-increments (or by 10-20%) every 24-48 hours, in line with results of blood glucose monitoring.
 - Monitor closely for early morning hypoglycemia if basal analogue insulin utilized.

T2DM patients who are well controlled with lifestyle measures or with oral hypoglycemic drugs that exacerbate their hyperglycemia during corticosteroid treatment

- May require an oral hypoglycemic agent or if already on an oral hypoglycemic regimen may require
 - dose intensification,
 - addition of an alternative agent or
 - initiation of insulin if despite these measures, blood glucose levels persistently remain >180 mg/dL.
 - With sulfonylurea there is a risk of hypoglycemia when corticosteroid doses are reduced, and this risk is very high when a nocturnal dose of corticosteroids is removed.
 - On starting insulin, the dose of sulfonylureas should be reduced to prevent hypoglycemia, while other oral hypoglycemic agents can be continued.
 - Patients on agents that can cause hypoglycemia need to **check their blood glucose levels more frequently than usual for at least 1 to 3 days after a glucocorticoid dose reduction**, because it may take this amount of time for the glycemic effect of the glucocorticoid to diminish and for them to adjust their diabetes medication to the appropriate dose

Use of Steroids (glucocorticoids) -Non-insulin Therapies

- The use of ***oral hypoglycemic drugs*** is reserved for the treatment of **mild glucocorticoid-induced hyperglycemia** (glycemia <200 mg/dL) in patients without known diabetes or with diabetes adequately controlled by lifestyle measures or oral hypoglycemic drugs.
 - In the absence of studies comparing different strategies, the choice of the oral hypoglycemic drug should depend on the type and schedule of the corticosteroid and on the potential advantages and disadvantages of oral hypoglycemic drugs.
- Preference should be given to agents that ***target postprandial hyperglycemia*** and have a ***rapid onset*** of action.

Non-insulin Medication options for people taking steroid therapy

- **Sulphonylureas** promote insulin release from pancreatic beta cell
 - A *short acting sulphonylurea*, such as glipizide, taken once daily may manage the glucose excursion associated with a once daily oral steroid treatment, with dose titration while monitoring for hypoglycemia (usually dose at same time)
- Shorter-acting agents (**Glinides**), such as nateglinide (Starlix) or repaglinide(Prandin) have an *immediate onset of action and a short effect duration* (allows adaptation to the hyperglycemic profile of the corticosteroids and reduces the risk of hypoglycemia in the morning)
 - For patients with mild hyperglycemia who are unable or unwilling to perform injections of insulin, a trial of short-acting secretagogues such as nateglinide or repaglinide taken before meals could be considered.
 - Their major disadvantage is the requirement for multiple daily doses.

Non-insulin Medication options for people taking steroid therapy

- **Metformin** is an attractive option because it enhances insulin sensitivity; thus, preventing metabolic side effects during systemic glucocorticoid therapy.
 - In patients requiring *long-term glucocorticoid use*, metformin could be a reasonable choice given acceptable renal function.
- **Pioglitazone** may improve diabetes-related parameters by antagonizing the pathways of glucocorticoid-induced insulin resistance and by reversing the adverse effects of glucocorticoids on β -cell function but *can take a number of weeks to achieve maximal effect*.
 - Pioglitazone is an option providing there are no contraindications (e.g., heart failure and fluid retention, particularly when used in conjunction with insulin, risk of fractures, unexplained macroscopic hematuria).

The usefulness of metformin and pioglitazone in the treatment of *transient* corticosteroid-induced hyperglycemia is *limited* due to their *slow onset of action*

Newer Options

- **Incretin medications** “should probably be the *drug of choice* because of their immediate onset of action, their predominant effect on postprandial glycemia, and their low risk of hypoglycemia related to glucose-dependent effects”.
Endocrinol Metab (Seoul). 2017 Jun; 32(2): 180–189.
 - “With an inherently low predisposition to hypoglycemia and **quick onset of action** [cg – exenatide ER (Bydureon) –not as quick onset], they are potentially well suited to dealing with steroid-induced hyperglycemia.” Morris D (2018) Diabetes & Primary Care 20: 183–7
- Case reports & variable results from studies of effectiveness of **SGLT-2 inhibitors**
 - “The mechanism of action of sodium–glucose cotransporter 2 (SGLT2) inhibitors (provided renal function allows) *suggests that they could be useful in dealing with hyperglycemia induced by steroids*, but firm evidence of their effectiveness is yet to be gathered” Morris D (2018) Diabetes & Primary Care 20: 183–7
 - “Dapagliflozin did *not* improve glycemic control in patients with *prednisone-induced hyperglycemia* during Acute Exacerbation of COPD. In future studies, it would be interesting to study its effect in patients with less severe hyperglycemia caused by lower-dose chronic glucocorticoid treatment.” Diabetes Obes Metab. 2018 May; 20(5): 1306–1310.
 - ? Risk of DKA

Type 2 diabetes and steroid treatment – General Guidance

- Set target for Capillary Blood Glucose (CBG) (e.g., 100-180)
- Consider increasing monitoring to 4 times daily
- Refresh diabetes education with patient
- If hyperglycemia on non-insulin therapies
 - Glipizide – titrate dose with *maximum (largest) dose in the morning*
 - Metformin – titrate to maximum of 1g BD
- If on evening once daily human insulin (NPH) consider *switch to morning dosing*
- If uncontrolled hyperglycemia or multiple daily dosing of steroid, consider switch to basal analogue insulin (or alternative regimen) and involve diabetes team
- Beware of nocturnal and early morning hypoglycemia

Helping Your Patients with Diabetes with Adjustments for Intercurrent Illness

- Important to **follow-up** with your patients with diabetes:
 - After hospital or ED admission for trauma or infection or another event (Acute MI, Pulmonary, CVA, etc.)
 - With newly diagnosed condition – especially if changes to ambulation, medication, diet, etc.
 - Postoperatively
 - After medication changes – even with non-diabetes related meds
 - E.g., Diuretics often elevate blood glucose levels, also atypical antipsychotic meds
 - Drug interference or other adverse effects – e.g., change in renal function or appetite
 - For steroid-induced hyperglycemia
 - Remember NPH insulin for the most common temporary glucocorticoid treatment
- Helping them adjust their glycemic management can help prevent
 - acute glycemic excursions & symptoms and avoid a bad outcome
 - a hospital or ED admission or readmission

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