

Practical approach to SGLT2 inhibitors for treatment of cardiovascular disease

Indications

Contraindications Caution

Outpatient Initiation

Special Considerations

Follow-up

Patients with Type 2 DM¹

or

Patients with chronic kidney disease (eGFR 25-90, UACR>20 mg/mmol)²

or

Patients with chronic HFrEF³

• CLI³

- eGFR<254
- Allergy or intolerance to SGLT2i⁵



Do not initiate SGLT2i

- Volume depletion⁵
- Active GMI⁶
- Hypotension (Blood pressure<95 mmHg)*,7
- Prior CLI
- DKA⁵ [specific to DM]
- History of severe hypoglycemia[†] [specific to DM]



Delay initiation of SGLT2i until condition resolved/ therapies modified to reduce risk Start 10 mg od qam:

- Dapagliflozin⁵
- Empagliflozin⁸

Start 100 mg od qam:

Canagliflozin⁹

 Monitor for GMIs, counsel on proper hygiene⁶

- Concomitant dehydrating illness (SADMANS)^{‡,10}
- Borderline renal function^{§, 5, 6}
- Volume depletion^{II,5}

Follow up routine as per underlying condition:

- Weight⁶
- Symptoms of hypotension ⁶
- Adherence⁶
- Renal function (eGFR)**,††,6
- Blood glucose⁶ [specific to DM]

Potential drug-drug effects with:



Loop diuretics

 Optional dose reduction¹ if euvolemic; 30–50% dose reduction if volume depletion occurs³

Insulin or SU

- If DM w/A1C<7.5, consider dose reduction (i.e., 10–20% insulin, and/or 50% SU)¹¹
- If episodes of hypoglycemia*, stop SU and dose reduce insulin¹¹

Abbreviations:

CLI: critical limb ischemia; **DKA:** diabetic ketoacidosis; **DM:** diabetes mellitus; **eGFR:** estimated glomerular filtration rate; **GMI:** genital mycotic infections; **HFrEF:** heart failure with reduced ejection fraction; **SGLT2i:** SGLT2 inhibitors;

SU: sulfonylurea; UACR: urine albumin to creatinine ratio

Ca

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Sick Day Medication List:

Patient becomes ill and is unable to maintain adequate fluid intake or have an acute decline in renal function (e.g. dehydrating illness)

S: sulfonylureas

A: ACE inhibitors/angiotensin or angiotensin neprilysin inhibitors

D: diuretics, direct renin inhibitors

M: metformin, mineralocorticoid receptor antagonists

A: angiotensin receptor blockers

N: nonsteroidal anti-inflammatory

S: SGLT2 inhibitors*

Abbreviation: ACE: angiotensin-converting-enzyme

Footnotes:

* Hypotension includes SBP <90 or significant symptomatic hypotension¹²; † Defined as any hypoglycemia requiring assistance of another person (this is typically a plasma glucose level of <2.8 mmol/L but can occur at higher readings)¹³; ‡ See sick day meds above; § Check creatinine in 2-4 weeks; || When applicable, reduce furosemide³; ¶ Most patients on concomitant diuretic dose do not undergo change in dose³; # If DM with repeated hypoglycemic episodes (outside of an acute illness with continued medication or in absence of obvious causes), refer to endocrinology; ** Expected 15% drop in eGFR early, concern only if drop >25% from baseline, first option reduction/hold diuretic³; †† If renal function declines (notably in macroproteinuric patients), other nephrotoxins (i.e., RAAS blockers, NSAIDS, etc.) must be ruled out and volume depletion must be corrected before consideration of holding SGLT2i. Consider holding medication and consult nephrology if GFR reduces by > 30%.⁵ Not currently indicated in Canada for Type I DM

Abbreviations: NSAIDS: nonsteroidal anti-inflammatory drug, RAAS: renin-angiotensin-aldosterone system, SBP: systolic blood pressure

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^{*} Decompensated heart failure does not count as a sick day for this drug, even if hospitalized, unless cardiogenic shock or acute kidney injury is present