

Guidance for the Management of diabetes medications for patients undergoing Cardiac Catheterisation (Cath Lab) Procedures

Aim of guidance: to provide information regarding the management of diabetes medication with the aim of maintaining blood glucose at target level whilst patients undergo a cath lab procedure.

Table one below outlines information for patients on insulin/oral antidiabetic agents as well as subcutaneous Glucagon-Like Peptide 1 receptor agonists (GLP-1RA) undergoing a Cath lab procedure. Outpatients are to bring their own insulin with them to the cath lab on the day of their procedure. Inpatients are to have their own insulin sent down to the cath lab (from the ward) also on the day of the procedure.

Table 1: Information regarding dosing and administration of diabetes medication in the pre and peri-operative phases for cath lab procedures including monitoring guidance

Medication	Monitoring	Morning procedure – dosing guidance	Afternoon procedure – dosing guidance
<p>Insulin</p> <p><i>See Appendix 1 below for examples of insulin products</i></p>	<p>DAY CASES: Monitor blood sugars (CBGs) on admission and at least one hour pre-theatre (more frequently if not to target).</p> <p>INPATIENTS: monitor CBGs as per usual regimen and one hour pre-theatre (more frequently if not to target).</p> <p>Target CBG: <u>6-10 mmol/L (during procedure)</u></p>	<p>Inject 50% of Rapid-acting (bolus) or biphasic insulin dose in the morning with a light breakfast at 6am.</p> <p>Continue with usual doses of long-acting/basal insulin (regardless of whether it is due in the morning or at night time).</p> <p>** Never withhold basal insulin**</p>	<p>Inject 50% of Rapid-acting (bolus) or biphasic insulin dose in the morning with a light breakfast at 8am.</p> <p>Continue with usual doses of long-acting insulin (regardless of whether it is due in the morning or at night time).</p> <p>** Never withhold basal insulin**</p>
<p>Insulin combination product E.g. Basal insulin + GLP1-RA</p>	<p>As above</p>	<p>**To continue Basal insulin combination therapies **</p> <p>E.g. Xultophy - 100 units/mL insulin degludec + 3.6 mg/mL liraglutide solution for injection. E.g. Suliqua - 100 units/ml insulin glargine + 50 microgram/ml lixisenatide solution for injection (</p>	
<p>Oral antidiabetic agents and S/C Glucagon-Like Peptide 1 receptor agonists (GLP-1RA)</p>	<p>DAY CASES: Monitor blood sugars (CBGs) on admission and at least one hour pre-theatre (more frequently if not to</p>	<p>Day Prior to Procedure All diabetes medications to be given <u>day prior</u> to the procedure. The exception to this is Metformin which is to be held <u>48 hours prior to procedure</u>.</p>	

<p><i>See Appendix 2 below for examples of oral products containing metformin and SGLT2 inhibitor products</i></p>	<p>target).</p> <p>INPATIENTS: monitor CBGs as per usual regimen and one hour pre-theatre (more frequently if not to target).</p> <p>Target CBG = 6-10mmol/L (during procedure)</p>	<p>Day of the Procedure All oral diabetes medications together with S/C GLP-1RA are to be held on the day of the procedure.</p> <p><u>This includes:</u></p> <ul style="list-style-type: none"> • Metformin • SGLT2 inhibitors e.g. dapagliflozin, empagliflozin • Sulphonylureas e.g. Gliclazide, glimepiride • DPP4 inhibitors e.g. sitagliptin • GLP1-RAs e.g. liraglutide, semaglutide (*see exception to this – when combined with basal insulin therapy – to continue in this instance) • Thiazolidinediones e.g. Pioglitazone • Acarbose
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Monitoring

Target Capillary Blood Glucose (CBG) is 6-10 mmol/L during procedure.

If CBGs are not to target and are poorly controlled – please see the ***SHSCT Guidelines for the Peri-operative Management of Diabetes Mellitus for Adults*** for guidance– (Scheme 2 P.g. 5/12).
See link: [Peri-Operative Management of Diabetes Mellitus for Adults](#)

Alternatively seek advice from the diabetes team.

Post-procedure

Post-procedure patients are offered tea and toast unless it's close to a meal time whereby they will have lunch or an evening meal. Most patients on return to the ward will be able to eat and then have their usual insulin treatment as prescribed with their first meal (where applicable). **Restart all oral agents the day following the procedure; see below for exceptions.**

The exceptions to this include:

- **SGLT2 inhibitors**
- **Metformin**

Hold both SGLT2 inhibitors and metformin for 48 hours post procedure. Restart when U+Es have been rechecked (renal function confirmed at baseline) and reviewed by a cardiology doctor. Patients taking SGLT2 inhibitors must be fully hydrated and eating and drinking as normal. (Please refer to the SPC for each SGLT2 inhibitor for specific renal dosing advice).

Appendix 1 – A List of Insulins listed by profile and commercial name

Insulin Profile Type	Insulin name – by Brand
Rapid-acting insulins/ Soluble insulin	<u>Rapid-Acting</u> : Novorapid®, Humalog®, Apidra®, Fiasp® <u>Soluble Insulin</u> : Actrapid®, Humulin S®
Biphasic insulin	Humulin M3®, Novomix 30®, Humalog Mix 25®, Humalog Mix 50®, Insuman Comb 15®, Insuman Comb 25®, Insuman Comb 50®
Once or Twice daily intermediate-acting <u>basal insulin</u> *always to be continued*	Humulin I®, Insulatard®, Insuman Basal®
Once-daily, long-acting, <u>basal insulin</u> *always to be continued*	Lantus®, Levemir® (note can be TWICE daily also), Toujeo®, Tresiba®, Abasaglar®

Appendix 2 - A list of branded products commercially available containing metformin/ SGLT2 inhibitors or a combination of both (as of September 2020- March 2021 BNF 80)

Medication	Commercially available names and combination products
List of Branded metformin products	Glucophage® Bolamyn SR® Glucient SR® Glucophage SR® Meijumet® Metabet SR® Metuxtan SR® Sukkarto SR® Yaltormin SR®
List of Branded <u>combination products containing metformin</u> <i>(9 licensed combination products containing metformin)</i>	Jentaducto® – Lingagliptin + metformin Vipdomet® – Alogliptin + metformin Komboglyze® – Saxagliptin + metformin Eucreas® – Vildagliptin + metformin Janumet® – sitagliptin + metformin Competact® – Pioglitazone + metformin Vokanamet® – canagliflozin + metformin Xigduo® – Dapagliflozin + metformin Synjardy® – Empagliflozin + metformin
List of SGLT2 inhibitor medications * Note above combination products with metformin and SGLT2 inhibitors*	Canagliflozin (Invokana®), Dapagliflozin (Forxiga®), Empagliflozin (Jardiance®) Ertugliflozin (Steglatro®)

