Getting the most from your sodium glucose co-transporter-2 inhibitors (SGLT-2i)

Information for patients, relatives and carers

Introduction

This leaflet has been designed to give you information about sodium glucose co-transporter- 2 inhibitors (SGLT- 2 inhibitors) and answers some of the questions that you or those who care for you may have about these medicines. It is not meant to replace the discussion between you and your medical team but aims to help you understand more about what is discussed. If you have any questions about the information below, please contact the person who provided you with this leaflet.

What are SGLT-2 inhibitors and who benefits from using them?

You are being treated with one of the SGLT-2 inhibitors medicines, sometimes known as “gliflozins" or “flozins”. These include, canagliflozin (Invokana), dapagliflozin (Forxiga), empagliflozin (Jardiance) and ertugliflozin (Steglatro).

These medicines were initially developed to treat people with diabetes as they lower blood glucose (sugar) by increasing the amount of glucose in the urine. They have been found to have additional benefits that include protecting the kidneys and heart, slowing the decline in kidney function and reducing the risk of heart failure and heart attacks in individuals at most risk.

Are there any side effects?

Common:

- **Dehydration** – Dehydration is when your body does not have as much water as it needs. These medicines increase the amount of urine that you pass so may cause dehydration. To prevent dehydration, drink fluids when you feel any dehydration symptoms and you should drink enough during the day so your urine is a pale clear colour (unless otherwise instructed by your doctor). It is also important to drink when there is a higher risk of dehydrating, for example, if you are vomiting, sweating or you have diarrhoea.

- **Fungal genital infections** – As these medicines increase the glucose in your urine, there is an increased risk of certain infections, such as thrush around the vagina and penis. However, this is easily treated (usually with a cream) and a pharmacist or your GP can give you advice if irritation or itching occurs in these areas. Washing your genital area with warm water, using non-perfumed soap and avoiding wearing tight underwear will reduce the risk of infection.

Uncommon side effects that are expected to be extremely rare in people without diabetes
There are a series of side effects which may almost exclusively affect people with diabetes. These are
uncommon or extremely rare, and are highly unlikely to affect people without diabetes:

- **An increase of acid in the blood** – SGLT-2 inhibitors may cause certain acids (ketones) to build up in the blood. This is called **ketoacidosis**. This is an event that occurs rarely in people without diabetes. The risk of ketoacidosis is increased if you do not eat for long periods, become dehydrated, drink excessive alcohol or are severely unwell. Please seek medical advice before starting any new diet particularly very low carbohydrate diets (also called ketogenic diets) as these can increase the ketones in the blood. Ketoacidosis presents with nausea and vomiting, abdominal pain, rapid breathing, and dehydration e.g. dizziness and thirst. Sufferers' breath smells like pear-drops/nail varnish remover. Ketoacidosis requires urgent medical assessment.

- **Foot disease leading to toe or other amputation** – if you have been told you have an "at risk foot" because of poor blood supply you should clarify with your doctor if you should start or remain on one of these medicines. If you have an active foot ulcer or problem with the blood supply in your leg you should stop these medicines.

- **Hypoglycaemia (low blood glucose)** – this usually only occurs if SGLT-2 inhibitors are used in people with diabetes in combination with insulin.

- **"Fournier's gangrene**" – this is an exceedingly rare infection in the groin area requiring urgent medical attention. The main symptom to be aware of is severe pain on pressing the skin over the groin area. If this develops, stop your SGLT-2 inhibitor and seek clinical advice.

Should I stop taking these tablets if I become unwell?

It is best practice to use **good sick day guidance** with these medications. You should miss them out if unwell especially in the presence of vomiting, diarrhoea or fever. You should also miss out your SGLT-2 inhibitor if you are fasting (e.g. before an elective surgical operation). You can restart them when you are better, however if you remain unwell (e.g. longer than 48 hours), we advise you seek medical advice from your GP/Pharmacist/NHS 111.

Sick day guidance

If you are unwell (vomiting, diarrhoea, fever, sweats and shaking), you should **temporarily** miss out the medicines listed below. If you are unsure or have any questions please seek medical advice.

- **blood pressure pills** – e.g. ramipril, lisinopril, losartan or other medicines ending with –"sartan" or –"pril"

- **diuretics** - (water tablets) e.g. furosemide, bumetanide, spironolactone

- **your SGLT-2 inhibitor/"gliflozin"** – i.e. canagliflozin, dapagliflozin, empagliflozin or ertugliflozin being used to treat your kidney disease **Restart your medicines** as soon as you are well and eating normally. Please seek medical advice if you continue to feel unwell after 48 hours.