SAFE AND PRAGMATIC USE OF SODIUM-GLUCOSE CO-TRANSPORTER 2 (SGLT 2) INHIBITORS: MEDICATION COUNSELLING

Kalra S1*, Aamir AH2, Amin MF3, Bajaj S4, Bulugahapitiya U5, Das AK6, Ghosh S7, Gunatilake S8, Mahar SA9, Qureshi N9, Raza SA10, Shrestha D11, Somasundaram N12, Sumanatilleke M13, Wijesinghe A12

1Department of Endocrinology, Bharti Hospital, Karnal, India, 2Department of Endocrinology & Metabolic diseases, Post Graduate Medical Institute, Hayatabad Medical Complex, Peshawar, Pakistan, 3Department of Endocrinology, BIRDEM, Dhaka, Bangladesh, 4Department of Medicine, MLN Medical College, Allahabad, India, 5Department of Endocrinology, Colombo South Teaching Hospital, Colombo, Sri Lanka, 6Department of Medicine, Pondicherry Institute of Medical Sciences, Puducherry, India, 7Department of Endocrinology, IGPGMR, Kolkata, India, 8Department of Medicine, National Institute of Cardiovascular Diseases, Karachi, Pakistan, 9Department of Endocrinology & Diabetes, Asgar Ali Hospital, Dhaka, Bangladesh, 10Department of Medicine, Shaukat Khanum Cancer Hospital and Research Centre, Lahore, Pakistan, 11Department of Endocrinology, Norvic Hospital, Kathmandu, Nepal, 12Department of Endocrinology, National Hospital of Sri Lanka, Sri Lanka, 13Department of Endocrinology, Teaching Hospital Karapitiya, Galle, Sri Lanka.

*Corresponding author

INTRODUCTION

Diabetes management is a complex process and optimal therapeutic outcomes are achieved with patient-centered multi-disciplinary care (1). This includes non-pharmacological and pharmacological interventions and also the counselling. Diabetes counselling is a vast concept, which covers many aspects of diabetes care, including medication counselling, and this is distinct from diabetes education (2).

MEDICATION AND COUNSELLING

Medication counselling is essential to ensure the correct usage of medical products and this is especially true in the treatment of chronic disease such as diabetes (3). Medication counselling includes the information delivered related to the possible benefits, the effects and side effect, the need for precautions and monitoring during that particular drug therapy. This is possible through a process of informed and shared decision making. In diabetes, some topics of counselling are common to all classes of glucose-lowering drugs, while some are unique to specific classes or molecules (4).

SODIUM GLUCOSE CO-TRANSPORTER-2 (SGLT2) INHIBITORS

Sodium-glucose cotransporter-2 (SGLT2) inhibitors are a new class of glucose-lowering drugs, which have recently been introduced in South Asia. Canagliflozin (100 and 300 mg), dapagliflozin (5 and 10 mg) and empagliflozin (10 and 25 mg) are some of the SGLT2 inhibitors available in South Asian countries. These drugs have a unique mechanism of action and reduce plasma glucose by enhancing glycosuria. Their mode of action creates the potential for benefits and side effects this class of drugs. This highlights the importance of appropriate use of SGLT2 inhibitors and the class-specific medication counselling (5).

CLASS SPECIFIC COUNSELLING

Table 1 lists the various issues that are discussed with the patient while considering prescription of SGLT2 inhibitors. A fair description of the expected benefits and possible side effects, anticipated level of glucose lowering, weight loss, blood pressure control, metabolic effects, and improvement in vascular outcomes of the drug are mainly considered.

WARNING SYMPTOMS AND PREVENTION

SGLT2 inhibitor related counselling also covers discussion about the expected increase in urinary output, the occurrence of glycosuria, and increased risk of genital mycotic infections (6). If relevant, SGLT 2 inhibitor related medication counselling should extend to identification, prevention and management of possible adverse events. Mycotic infections, identified by pruritic genital lesions in both men and
women, can be avoided by maintaining perineal hygiene (6). Volume depletion can be prevented by ensuring adequate fluid intake, avoiding concomitant use of loop diuretics and reassessing use of other diuretics (5).

The warning signals for diabetic ketoacidosis (DKA), including symptoms such as breathlessness, abdominal pain and altered sensorium must be explained to patients and their caregivers. This is especially important when SGLT2 inhibitors are prescribed in “high risk” situations, where DKA has been known to occur. These include fluid/carbohydrate restriction, acute medical/surgical illness, and insulinopenic diabetes (7).

POSOLOGY
The cost, mode, frequency and timing of administration of the drug, as well as possible drug-drug interactions should be shared with patients prior to prescription. While canagliflozin should be taken before the first meal of the day, dapagliflozin and empagliflozin may be administered at any time, at the same time of the day. All drugs are administered as a single daily dose (8). During a period of fasting, such as Ramadan, it is prudent to advise to take the drug with iftar (i.e., at the time of breaking the fast).

DRUG INTERACTIONS
Significant drug-drug interactions must be noted by the physicians while initiating SGLT2 inhibitor therapy. The patient should be instructed to report any change in concomitant medication, even if advised by other physicians. It is noteworthy that there are few relevant drug interactions with SGLT2 inhibitor therapy.

SUMMARY
Understanding of the basic and clinical pharmacology of SGLT2 inhibitors, coupled with an appreciation of the patient’s lifestyle, needs and priorities allow for the appropriate use of these drugs. Their utility is optimized if medication counselling is done as described above. This sharing of information, if done through a patient-centered dialogue (9), prevents avoidable adverse events, minimizes side effects, and maximizes therapeutic gain.

ACKNOWLEDGEMENT
This perspective is written by the South Asian Federation of Endocrine Societies (SAFES) working group, which met in Kathmandu, Nepal on 23 and 24 July 2016, to achieve consensus on the safe and pragmatic use of SGLT2 inhibitors in South Asia.

REFERENCES


