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### SAT-735:

### Are They Related: Sglit-2 Inhibitors and Stroke?

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#### ABSTRACT

#### Abstract:

**BACKGROUND:** 2 cases of stroke were seen in patients who had recently started on SGLT-2 inhibitors. SGLT-2 inhibitors are antidiabetic agents which act on SGLT-2 receptors to promote euglycemia by producing glycosuria. Advantages of SGLT-2 agents include weight loss, reduction in BP, favorable lipid effect and HbA1C reduction of 0.5-0.7%.

The major side effects stem from the polyuria due to osmotic diuresis. There have been reports of greater reduction in systolic as well as diastolic BP resulting in orthostatic hypotension as well as dizziness. We consider that dehydration due to osmotic diuresis could result in posterior circulation stroke in susceptible individuals.

#### CLINICAL CASES:

Case #1. A 60 year old male was diagnosed with prediabetes about 1 year ago and was started on Metformin. A1c was not at goal and Dapagliflozin was added about 3-4 months prior to the event. The patient did not feel well on it. He did have weight loss of 12 pounds and it was continued. He developed right pontine stroke with residual speech deficit and facial palsy. While in rehab he continued on these medications. A new stroke affecting the right cerebellar peduncle occurred. He had MRA done with the second stroke which showed mild narrowing of the distal basilar artery. The A1C was 7.1% prior to this stroke. BP was well controlled at home and had permissive higher BP in the rehab. He denied use of tobacco. He was on statin therapy with LDL 74 mg/dL. Echocardiography as well as MRA of the brain did not reveal any abnormality. Dapagliflozin was stopped. The blood sugar was well controlled with Metformin. We asked him to avoid SGLT-2 inhibitors in the future.

Case #2. A 60 year old female had type 2 diabetes mellitus for 7 years. She did not tolerate Metformin and was put on multiple daily dose of insulin. When her A1C was not well controlled Dapagliflozin was started about 8 months prior to the event. She had a history of hypertension, hyperlipidemia and prior stroke. She developed left sided hemiplegia with acute infarct in right basal ganglia. MRA as well as CTA of brain and neck vessels did not reveal any significant stenosis. She did not have cardiac arrhythmia and echocardiography did not reveal any shunt process. Her A1C was 7.4% prior to the stroke. Her BP was well controlled at home and had permissive higher BP in the rehab. She was on optimal dose of statin for her risk factors.

**CONCLUSION:** Although patients with Diabetes mellitus are at an increased risk of atherosclerotic diseases including stroke, we present these 2 cases which coincide with the addition Dapagliflozin. It is possible that the ensuing osmotic diuresis could have precipitated the stroke. Avoiding SGLT-2 inhibitors in patients with a history of stroke or risks for dehydration such as the elderly, patients on diuretics may be warranted. Further research in this area will assist in guiding the indications for this therapy.

Nothing to Disclose: G. Panchal, MD, N. Blocher, MD, A. Chernoff, MD.