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EMPAGLIFLOZIN AND DEHYDRATION DURING RAMADAN: IS THERE A CONCERN?

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INTRODUCTION

Ramadan fasting is compulsory for healthy Muslims. In persons with type 2 diabetes (T2D), the risk of hypoglycaemia, hyperglycaemia and diabetes-related complications may increase, depending on background treatment and the presence of diabetic complications. Empagliflozin increases water excretion via glycosuria, leading to volume depletion. This study was done to examine the impact of empagliflozin use during Ramadan, specifically on volume status.

METHODOLOGY

This was an observational, case-control study conducted in single centre in the east coast of Malaysia. Individuals aged 18 to 75 years with confirmed T2D were assigned to group 1 if on empagliflozin (10 mg or 25 mg OD) for at least 3 months prior to enrollment, and group 2 if on standard diabetes therapies except any sodium glucose cotransporter 2 (SGLT2) inhibitor. Subjects were seen before and during Ramadan for body parameters and blood examinations.

RESULTS

There were 50 subjects recruited for each group. Group 1 had longer duration of diabetes and higher International Diabetes Federation - Diabetes and Ramadan score compared to group 2. Other baseline characteristics were similar. Weight and BMI reduction were higher in patients taking empagliflozin but this was not statistically significant. Waist circumference changes were higher in group 1 (-1.61 versus -0.46 cm, p=0.039). Subjects on empagliflozin had similar increments of urea and creatinine during fasting, with higher urea-creatinine ratio (UCR) at baseline. During Ramadan, UCR was reduced in group 1, compared to an increase in group 2. Haematocrit levels were similar in both groups.

CONCLUSION

During Ramadan, body weight reduction occurred due to reduction in caloric intake. Empagliflozin increased the magnitude of weight reduction compared to standard therapy. Volume depletion was not significantly increased among patients taking empagliflozin. The use of an SGLT-2 inhibitor in patients with T2D in Ramadan is safe without risk of dehydration.