Type 2 diabetes mellitus (T2DM) is a chronic and progressive disease that is characterized by β-cell dysfunction, insulin resistance, and a lack of insulin secretion. This condition is associated with multiple comorbidities and potential complications: improved glycemic control, along with body weight and blood pressure (BP) reduction, can lower the risk of complications and permanently modify in patients with T2DM.

Different classes of antihyperglycaemic agents (AHAs) impact diabetes-relevant endpoints in different ways. Sitagliptin (SITA), a DPP-4 inhibitor, reduces glycosylated haemoglobin (HbA1c) by inhibiting sodium glucose co-transporter 2 (SGLT2), which results in reduced blood glucose by lowering the renal threshold for glucose and increasing urinary glucose excretion. This mechanism also results in weight loss and BP reduction. The efficacy of SITA is independent of insulin and distinct from the glucose-lowering effects of basal insulin and insulin secretagogues.

Two Phase III, randomized controlled trials (RCTs) evaluated the efficacy and safety of SITA compared to metformin (MET) in patients with T2DM randomized to a metformin (DIAMOND) or merged with existing AHAs (EMR) and with baseline BMI of 30–35 kg/m². SITA showed a decreasing HbA1c reduction by increasing baseline BMI, while the efficacy of CANA decreased in a dose-dependent manner in low-bMI patients (<25 kg/m²). In high-bMI patients, in contrast to treatments with an insulin-independent moa, the results based on the EMR data showed similar decreasing HbA1c reduction in high-bMI patients, in contrast to treatments with an insulin-independent moa.

Moreover, it has been confirmed using electronic medical record (EMR) data from the real-world setting before initiation of SITA were used as baseline values in both the RCTs in a real-world setting.

In both RCTs, SITA showed a decreasing HbA1c reduction by increasing baseline BMI, while the efficacy of CANA was independent of BMI. The results based on the EMR data showed similar decreasing HbA1c reduction in high-bMI patients, and confirmed findings from the RCTs as a real-world setting.

The effectivity and effectiveness in HbA1c lowering are dependent on baseline body mass index for Sitagliptin but not for Canagliflozin in the treatment of Type 2 Diabetes Mellitus.

**REFERENCES**