Sodium glucose cotransporter 2 (SGLT2) inhibitors (SGLT2i) are a group of glycosuric drugs approved in the management of type 2 diabetes mellitus. They act on the sodium glucose cotransporter and inhibit renal glucose reabsorption. Canagliflozin, dapagliflozin and empagliflozin are members of the SGLT2i group. SGLT2 is supposed to be unique to the kidney. Recent studies showed the benefits of these agents beyond and independent from glucose lowering. New guidelines emphasize these pleiotropic effects such as cardioprotective and renoprotective effects of SGLT2i and suggest them as first line oral antidiabetics in patients with coronary heart disease.

On the other hand, adverse events related to SGLT2i are being reported in the literature. SGLT2i are found to be associated with euglycemic ketoacidosis, fractures and acute kidney injury. Food and Drug Administration (FDA) recently added a warning about the risk of serious genital infections with SGLT2i to the previous warning about the risk of leg and foot amputations specifically with canagliflozin.

In this issue of Diabetes Research, we wanted to evaluate these novel agents with all aspects and aimed to summarize the beneficial effects of and possible adverse events related to SGLT2i. We hope the clinicians who deal with diabetes will benefit much from the concise reading of this special issue of Diabetes Research.