Second-generation SUs include glyburide (glibenclamide), glipizide, gliquidone, and glimepiride, which vary in duration of action. Glimepiride and glyburide are longer-acting agents than glipizide. Glimepiride is the newest second-generation SU and is sometimes classified as a third-generation SU because it has larger substitutions than other second-generation SUs. It was first introduced into clinical practice in Sweden. The United States Food and Drug Administration (FDA) approved glimepiride in 1995 for the treatment of T2DM as monotherapy as well as in combination with metformin or insulin.

Although other SUs are used with insulin, glimepiride is the only SU approved by FDA for use in combination with insulin. It is used in more than 60 countries worldwide. Treatment with glimepiride as monotherapy results in a 1.5-2.0% reduction in HbA1c (Shukla *et al*., 2004 ; Massi-Benedetti M, 2003) .

Glimepiride is an oral blood-glucose-lowering drug of the sulfonylurea class. Glimepiride is 1-[[p-[2-(3-ethyl-4-methyl-2-oxo-3-pyroline-1-carboxamido)ethyl]phenyl1]-3-(trans-4-methylcyclohexyl) urea with an empirical formula of $C_{24}H_{34}N_4O_5S$, and a molecular weight of 490.6 (Rosamond W, Flegal K, Furie K, et al. – 2008)(Volpe M, Alderman MH, Furberg CD, et al. 2004). Glimepiride lowers blood glucose by stimulating the release of insulin from pancreatic beta cells. Extrapancreatic effects (increasing the sensitivity of the peripheral tissues to insulin) may also play a role in the activity of glimepiride, such as other sulfonylureas. After oral administration, it is completely absorbed from the gastrointestinal tract. Peak plasma concentration is reached 2–3 h after dosing. Its bioavailability changes somewhat with food. Approximately 99.5% of glimepiride is bound to plasma proteins. A volume of distribution is 8.8 L. Glimepiride is completely metabolized in the liver. The mean plasma elimination half-life of glimepiride is 5–8 h (Volpe M, Alderman MH, Furberg CD, et al. 2004).

Although insulin therapy has been shown to improve the health outcomes of patients with type 2 diabetes, its initiation and intensification are commonly postponed because of concerns over the