Relationship between Cystatin C, Cardiovascular Events and Kidney Outcomes in DECLARE–TIMI 58


Cystatin C (CysC) is a marker of kidney function less dependent on body composition than creatinine (Cr).
We hypothesized that CysC-based measures of kidney function would be associated with CV and kidney outcomes in DECLARE–TIMI 58, a T2D dapagliflozin trial that excluded patients with worse than mild CKD.

METHODS

• DECLARE–TIMI 58 included 17,160 patients with or at risk for atherosclerosis and CrCl ≥60 mL/min.
• CysC was measured in 3,698 patients using a case-cohort design. HRs were determined in placebo-treated patients for key outcomes according to serum CysC levels and CysC-based measures of kidney function and adjusted for baseline characteristics.
  The major outcomes included CV death, MACE, and renal composite (≥40% decrease in estimated glomerular filtration based measures of kidney function in the risk prediction for CV and kidney events independent of CrCl).
  These findings suggest a role for CysC levels and CysC-based measures of kidney function in the risk prediction for CV and kidney outcomes independent of traditional measures of kidney function.
  Patients showed a similar benefit from dapagliflozin regardless of baseline CysC level.

CONCLUSION

• In patients with T2D and preserved kidney function, CysC levels and CysC-based measures of kidney function were both associated with higher rates of CV and kidney events independent of Cr-based eGFR.
• The ability of CysC-based measures to identify individuals who may derive greater benefits from SGLT2i requires further investigation.