Glucose control could help reduce diabetic nephropathy incidence

Longitudinal data obtained in a post-trial observational study suggest that glucose control may be a key determinant for ESRD risk. The ADVANCE-ON Trial found patients who maintained strict glucose control demonstrated evidence of a sustained and significant reduction in ESRD over a long period of time with a median of nearly 10 years.

Our study also suggests that the benefits are greater when treatment is begun early in the course of the disease, and in people in whom blood pressure is well-controlled,” said lead author Vlado Perkovic, MBBS, PhD, FASN. “These results suggest that finding better ways to control glucose levels is key to preventing the epidemic of kidney failure due to type 2 diabetes around the world.”

New understandings in AKI

Two studies evaluated potential therapies for AKI in the hospital setting, a common complication that can lead to kidney failure and in some cases death.

The first examined the use of aspirin and clonidine with non-cardiac surgery to determine if it could reduce the incidence of AKI. “We need treatments to prevent AKI in the surgical setting, and early data suggested taking aspirin in this regard might be beneficial,” said Amit Garg, MD, the study’s author. The substudy of the periOperative ISchemic Evaluation-2 (POISE-2) Trial included 6905 patients undergoing non-cardiac surgery. Investigators found that use of aspirin around the time of surgery increased the risk of major bleeding, which was associated with a greater risk of subsequent AKI. The use of clonidine (a medication used to treat hypertension) around the time of surgery increased the risk of low blood pressure, which was associated with a greater risk of subsequent AKI.

Compared with placebo, neither aspirin nor clonidine altered the risk of most AKI observed after major non-cardiac surgery. “Approximately 200 million adults undergo major non-cardiac surgery each year, and among patients taking aspirin prior to surgery there is substantial practice variability as to whether it is held or not in the perioperative period,” the study investigators noted (4).

Another AKI study evaluated the use of mesenchymal stem cells in patients undergoing cardiac bypass surgery. The ACT-AKI study built on previous work that demonstrated the cells’ potential to prevent AKI and promote recovery of renal function after it occurred. A trial of 156 patients who developed AKI following cardiac surgery found that treatment with certain stem cells did not shorten the time it took patients to achieve complete kidney recovery, nor did it decrease their risk of dying prematurely or needing dialysis. Unfortunately, “AKI is a common condition and there is no effective treatment,” the researchers said (5).

Advances in dialysis reported

Several studies reported research on innovations in care for patients on dialysis. The first study examined a new approach to in-stent restenosis, a common problem in the care of ESRD patients. It included 265 dialysis patients, and found that the Fluency® Plus Endovascular Stent Graft—which is placed inside a blocked stent to re-open it and allow adequate blood to flow and dialysis to take place—was superior to balloon angioplasty alone through 6 months. The Fluency® Plus Endovascular Stent Graft was better for restoring blood flow and keeping the area open longer. “In-stent restenosis is a common problem in the care of ESRD patients. This study represents the first level-1 evidence for the use of stent-grafts in the treatment of both arteriovenous fistula and arteriovenous graft stenosis,” said lead author Alexander Yezelmin, MD (6).

Another, ACTIVE Dialysis Multinational Trial, examined the use of extended hemodialysis hours to determine if it would improve patient outcomes. Among 200 patients on dialysis, extending weekly dialysis hours for 12 months did not improve quality of life, but was linked with improvements in some laboratory measures (such as potassium and phosphate blood levels) and a reduced need for blood pressure medications (7).


References