Peritransplantation NGAL and IL-18 predict 1-year graft function

Two biomarkers of kidney injury measured shortly after transplantation are associated with allograft function after 1 year, reports a study in the Clinical Journal of the American Society of Nephrology.

The prospective, multicenter study included 154 patients, mean age 54 years, undergoing deceased-donor kidney transplantation. The levels of neutrophil gelatinase-associated lipocalin (NGAL) and interleukin-18 (IL-18) were measured in early posttransplantation urine specimens. These biomarkers were evaluated for association with poor allograft function—defined as an estimated GFR of less than 30 mL/min/1.73 m²—at 1 year.

There was a 42 percent rate of delayed graft function. At 1 year, 16 percent of recipients met the study criteria for poor allograft function. Elevated levels of both biomarkers were significantly associated with the 1-year outcome. For patients with upper median values on the first day after transplantation, the adjusted odds ratios were 6.0 for NGAL and 5.5 for IL-18.

The net reclassification improvement was 86 percent for urine NGAL and 45 percent for IL-18. There was no significant interaction between the biomarkers and delayed graft function. Changes in biomarker levels over consecutive days showed a moderate trend with 1-year allograft function.

New approaches are needed to predict outcomes after kidney transplantation. This study suggests that elevated levels of urine NGAL and IL-18 are both associated with poor allograft function 1 year after transplantation. The biomarkers may have "potential for identifying patients for therapies that minimize the risk of additional injury," the investigators conclude [Hall IE, et al. Association between peritransplant kidney injury biomarkers and 1-year allograft outcomes. Clin J Am Soc Nephrol 7:1224-1235].

Colonoscopy for screening after kidney transplantation?

Kidney transplant recipients have high rates of advanced colorectal neoplasia and cancers, which are better detected by colonoscopy than by fecal hemoglobin screening, suggests a study in the British Medical Journal.

The cross-sectional study included 229 Australian kidney transplant recipients, mean 9.0 years since transplantation. All were at least 50 years old and, aside from kidney transplantation, at average risk of colorectal cancer. The patients underwent fecal immunochemical testing for hemoglobin followed by colonoscopy with histologic examination of biopsy specimens. The two tests were compared for detection of advanced colorectal neoplasia. Adenoma at least 10 mm in diameter, villosus features, high-grade dysplasia, or colorectal cancer. Advanced colorectal neoplasias were detected by colonoscopy in 13 percent of patients and by fecal hemoglobin in 12 percent. Colonoscopy detected colorectal cancer in five patients, three of whom had abnormal results on fecal hemoglobin testing.

The fecal test had 31 percent sensitivity and 90.5 percent specificity for the detection of advanced colorectal neoplasia: adenoma at least 10 mm in diameter, villosus features, high-grade dysplasia, or colorectal cancer. Advanced colorectal neoplasias were detected by colonoscopy in 13 percent of patients and by fecal hemoglobin in 12 percent. Colonoscopy detected colorectal cancer in five patients, three of whom had abnormal results on fecal hemoglobin testing.

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CKD linked to increased stroke and embolism risk in AF

When chronic kidney disease (CKD) and atrial fibrillation (AF) occur together, the rates of stroke, thromboembolic events, and hemorrhage are higher than with AF alone, reports the New England Journal of Medicine.

Patients with CKD from 1997 to 2008 were used to identify 132,372 patients with nonvalvular atrial fibrillation. The risks of stroke, systemic thromboembolism, and bleeding were compared for patients with and without CKD. The risks and benefits of treatment with aspirin and warfarin were also compared.

Of this population of AF patients, 2.7 percent had non–end-stage CKD and 0.7 percent had end-stage disease requiring renal replacement therapy. The risks of stroke and systemic thromboembolism were elevated in both kidney disease groups; hazard ratio 1.49 for those with non–end-stage CKD and 1.83 for those receiving renal replacement therapy. The excess risks associated with kidney disease were lower for patients receiving warfarin, but not aspirin.

The bleeding risk was also increased for patients with kidney disease; hazard ratio 2.24 for non–end-stage CKD and 2.70 for disease requiring renal replacement therapy. These risks were further increased for patients taking warfarin, aspirin, or both. In the non–end-stage CKD group, higher doses of loop diuretics were associated with increased bleeding risk.

Atrial fibrillation and CKD are both associated with increased rates of stroke or thromboembolism. The new study reports that both risks are significantly increased for patients with both diagnoses, compared with AF alone. Warfarin can increase the risk of stroke or thromboembolism in patients with CKD and AF, but bleeding risk is increased with warfarin, aspirin, or both (Olesen JB, et al. Stroke and bleeding in atrial fibrillation with chronic kidney disease. N Engl J Med 2012; 367:625–635).