**As eGFR Goes Down, Coronary Artery Calcium Goes Up**

Worsening chronic kidney disease (CKD) is linked to increasing coronary artery calcification (CAC) independently of traditional risk factors, reports a study in the American Journal of Kidney Diseases.

The study included a multimethod sample of CKD patients from the Chronic Renal Insufficiency Cohort Study. All patients underwent coronary artery calcification measurement at the time of the first long-term dialysis treatment.

The results showed a strong graded association between decreased kidney function and increased CAC. On unadjusted analysis, the risk ratio for having a higher CAC score increased from 1.68 at an eGFR of 50 to 59 mL/min/1.73 m² to 2.82 at an eGFR less than 30 mL/min/1.73 m². The association was somewhat weakened on multivariate analysis but was still significant: odds ratio 1.53 at an eGFR less than 30 mL/min/1.73 m². The association was independent of traditional risk factors and albuminuria.

Coronary artery calcification is a risk factor for fatal and nonfatal cardiovascular events, but its significance in the CKD population is unclear. This cross-sectional study of CKD patients finds that lower levels of kidney function are independently associated with higher CAC scores.

The results may have important implications for the care of patients with CKD, especially in light of recent guidelines calling for vascular/valvular calcification to be considered in individualized treatment. The ongoing study will collect data on how CAC affects the rates of cardiovascular and renal events in patients with CKD. (Budoff MJ, et al. Relationship of estimated GFR and coronary artery calcification in the CRIC [Chronic Renal Insufficiency Cohort] study. Am J Kidney Dis 2011; 58:519–526.)

**Why Do Young Transplant Patients Have Poor Outcomes after Transfer to Adult Care?**

The increased rate of adverse outcomes in adolescent and young adult patients transferred from pediatric to adult care appears to reflect factors other than the transfer itself, suggests a report in BMC Nephrology.

The researchers analyzed graft survival in three Canadian cohorts of young patients undergoing kidney transplantation at affiliated pediatric and adult hospitals from 1990 through 2009. Transplantation was performed by the same surgeons even though the two sites were geographically separate. Children are transferred from the pediatric to the adult medical team at about age 18.

Outcomes for 49 pediatric patients undergoing transplantation at a pediatric hospital were compared with outcomes for two cohorts undergoing transplantation at the adult hospital: 48 young adults 18 to less than 25; and 124 adults 25 to 35. Death-censored graft survival was assessed by a multivariate Cox model.

There was no significant difference in graft survival between the pediatric and young adult cohorts. However, survival was significantly better in the adult cohort. The three cohorts had similar rates of admitted nonadherence.

Transfer from the pediatric to the adult center occurred within a relatively narrow age window of 16.6 to 20.9 years. However, the time since transplantation varied substantially: range 0.9 to 11.0 years. Graft function at the time of transfer was also variable. Six of 18 pediatric patients had a serum creatinine greater than 180 μmol/L at transfer; all of these grafts eventually failed.

Addressing the concern that pediatric transplant patients transferred to adult centers are at increased risk for graft loss, the researchers write, “Khidir IJ, et al. Kidney transplant survival in pediatric and young adult cohorts. BMC Nephrol 2011; 12:54.”

**Trial Questions the Benefits of Frequent Nocturnal Dialysis**

Nocturnal home dialysis performed six nights weekly does not improve mortality or other outcomes compared with conventional hemodialysis three times weekly, concludes a trial in Kidney International.

In the Frequent Hemodialysis Network Nocturnal Trial, 87 patients were randomly assigned to undergo conventional hemodialysis performed three times weekly or nocturnal home dialysis performed six times weekly. Single-use high-flux dialyzers were used for all sessions.

The patients assigned to frequent nocturnal home dialysis had a mean dialysis weekly standard of 4.72 Kt/Vurea compared with Kt/Vurea in the conventional dialysis group. The average number of weekly treatments was about 75 percent higher, and the average weekly treatment time was more than twice as high.

Nevertheless, there was no significant difference in either of two coprimary outcomes: death or left ventricular mass, measured by magnetic resonance imaging.

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**How Often Should Diabetic Patients See Their Primary Care Doctor?**

Making primary care visits every 2 weeks leads to faster achievement of glucose, blood pressure, and cholesterol targets in patients with diabetes, reports a study in the Archives of Internal Medicine.

The retrospective study included 26,496 patients with diabetes receiving primary care at two Boston hospitals between 2000 and 2009. The frequency of primary care encounters, assessed from notes in the medical records, was analyzed as a predictor of time to achievement of target levels of hemoglobin A1c (HbA1c), blood pressure, and LDL cholesterol (LDL-C).

Primary care visits every 1 to 2 weeks were associated with shorter times to reaching all three targets compared with visits every 3 to 6 weeks. For patients not receiving insulin, the HbA1c target of less than 7.0 percent was met at a median of 4.4 months with visits every 1 to 2 weeks compared with 24.9 months for visits every 3 to 6 weeks. For patients using insulin, the medians were 10.1 versus 52.8 months.

Shorter intervals were also associated with faster achievement of a blood pressure under 130/85 mm Hg (1.3 versus 13.9 months) and LDL-C less than 100 mg/dL (20.5 versus 33.9 months). On multivariate analysis, doubling the time between visits increased the time to reaching target HbA1c by 35 percent in patients not using insulin and by 17 percent in those using insulin. Doubling the time between visits also increased the time to lowering blood pressure by 87 percent and time to lowering LDL-C by 27 percent. In general, no further reduction in time to reaching targets was achieved at intervals of less than 2 weeks.

The results suggest that more frequent primary care visits may shorten the time to achieving key clinical targets for patients with diabetes. There is a strong dose–response effect of visit frequency on all three outcomes evaluated. The effect remains significant even after treatment intensification is accounted for. (Morrison F, et al. Encounter frequency and glucose level, blood pressure, and cholesterol level control in patients with diabetes mellitus. Arch Intern Med 2011; 171:1542–1550.)

**Dialysis Is Starting Earlier, Study Finds**

From the late 1990s to the late 2000s, long-term dialysis was initiated an average of nearly 150 days earlier, according to a study in the Archives of Internal Medicine.

Trends in the timing of initiation of long-term dialysis were assessed by use of information from the U.S. Renal Data System end stage renal disease registry. Information on estimated GFR (eGFR) at the time of the first long-term dialysis treatment was modeled for patients who started dialysis in 1997 versus those who began dialysis in 2007. Data from an integrated health care system were used to assess the predialysis eGFR slope.

Dialysis was initiated a mean of 147 days earlier in 2007 than in 1997, after differences in patient characteristics were taken into account. The difference was fairly consistent across most patient subgroups but was largest for patients 75 or older: mean 233 days. The mean eGFR before dialysis increased from 6.8 mL/min/1.73 m² for those starting dialysis in 1997 to 9.9 mL/min/1.73 m² for those starting dialysis in 2007.

As reflected by the new study, there is a trend toward starting long-term dialysis at higher rates of eGFR. The results suggest that patients in the United States are starting dialysis about 5 months earlier on average, and nearly 8 months earlier for patients 75 or older. “In the absence of strong evidence to suggest that earlier initiation of long-term dialysis is beneficial, these findings call for careful evaluation of contemporary dialysis initiation practices in the United States,” the researchers write. (O’Hare AM, et al. Trends in timing of initiation of chronic dialysis in the United States. Arch Intern Med 2011; 171:1663–1669.)