Increased circulating galectin 1 level is associated with progression of kidney function decline in patients with suspected coronary artery disease, independent of diabetes

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Background: Galectin-1 modulates acute and chronic inflammation, and is associated with glucose homeostasis and chronic renal disease. Whether serum Galectin-1 levels could predict the short-term and long-term renal outcomes after contrast exposure in patients with suspected coronary artery disease remains uncertain.

Purpose: This study aimed to evaluate the relationship between serum Galectin-1 levels and the incidence of contrast-induced nephropathy and to investigate the predictive role of circulating galectin-1 levels in renal function decline in patients undergoing coronary angiography.

Methods: In total, 798 patients who had received coronary angiography were enrolled. Serum galectin-1 levels were determined before administration of contrast media. Contrast-induced nephropathy was defined as a rise in serum creatinine of 0.5 mg/dL or a 25% increase from baseline within 48 h after the procedure. Progressive renal function decline was defined as >30% decrease in estimated glomerular filtration rate after discharge. All patients were followed up for at least one year or until the occurrence of death after coronary angiography.

Results: Overall, contrast-induced nephropathy occurred in 41 (5.1%) patients. During a median follow-up of 1.4 ±1.1 years, 80 (10.0%) cases had subsequent decline in renal function. After adjustment for demographic characteristics, kidney function, traditional risk factors, and medications, higher galectin-1 level was found to be independently associated with a higher risk for mortality and renal function decline (tertile 2, HR=3.12 95% CI,1.25–7.78; tertile 3, HR=3.25, 95% CI,1.42–7.41) but not for contrast-induced nephropathy, regardless of the presence of diabetes.

Conclusions: Higher baseline serum galectin-1 levels were associated with a higher risk of mortality and renal function decline in patients undergoing coronary angiography. Galectin-1 may play a pivotal role in progressive renal dysfunction, but further studies are needed to verify these results.