GLOSSARY

ACANTHOCYTES
Red blood cells with vesicle-shaped protrusions; they indicate a glomerular source for hematuria

Nephrologists perform more accurate urinalysis than clinical laboratory personnel

A prospective study at the University of California Davis Medical Center has revealed worrying inaccuracies in urinalyses performed by the centers' affiliated clinical laboratory. The findings call into question the Clinical Laboratory Improvement Amendments of 1988, which recommend that certified technicians conduct laboratory tests rather than physicians.

Four sets of diagnoses were assigned by two blinded nephrologists (A and B) to each of 26 patients with acute renal failure, based on urinalyses by Nephrologist A and the clinical laboratory. Diagnoses were compared with those determined by consulting nephrologists with full access to patients' clinical history. The accuracy of Nephrologist A's diagnoses based directly on his own observation of patient urine (92.3%) was greater than his own or Nephrologist B's accuracy using laboratory-generated reports (23.1% and 19.2%, respectively; $P<0.0001$ for both). Renal tubular epithelial cells and casts, granular casts, hyaline casts and ACANTHOCYTES were detected more frequently by Nephrologist A than by laboratory staff, who probably misclassified some cells as squamous epithelia.

The researchers suggest that such errors are common in clinical laboratories, and call for a reversal of the recent trend towards reduced reliance on urinalyses performed by nephrologists. This study might also spur clinical laboratories to improve their practices by reducing delays between collection and analysis of urine, and to train personnel to correctly identify different cell types.

Rachael Williams

Original article Tsai JJ *et al.* (2005) Comparison and interpretation of urinalysis performed by a nephrologist versus a hospital-based clinical laboratory. *Am J Kidney Dis* **46:** 820–829

Ruboxistaurin: a promising new treatment for use in diabetic nephropathy

Approximately 40% of patients with diabetes develop nephropathy, which often leads to end-stage renal disease. Current treatment strategies—use of antihypertensives, glycemic control, and limiting dietary protein—are inadequate in many patients. A recent randomized, controlled, double-blind pilot study shows that ruboxistaurin might be beneficial in diabetic nephropathy.

From June 2002 to May 2003, 123 patients with type 2 diabetes and persistent albuminuria (albumin : creatinine ratio [ACR] 200–2,000 mg/g) were randomized to either ruboxistaurin (32 mg/day) or placebo, for 1 year. Patients continued antihypertensive treatment (renin–angiotensin system inhibition) throughout. Follow-up visits at months 1, 3, 6 and 12 recorded urinary ACR, blood pressure, and adverse events. The primary endpoint was a reduction in urinary ACR; estimated glomerular filtration rate (eGFR) was also calculated.

Baseline urinary ACR values and eGFR were similar in the two groups. Patients receiving ruboxistaurin experienced a significant ACR decrease after 1 year ($-24 \pm 9\%$; $P=0.020$), and eGFR did not decrease significantly. By contrast, ACR did not decrease significantly in placebo patients ($-9 \pm 11\%$; $P=0.430$), and eGFR showed a significant decline ($P=0.009$). ACR reduction and eGFR changes did not show significant differences between treatment groups, but the study was not adequately powered to determine such differences.

Despite various study limitations, the authors conclude that ruboxistaurin shows promising beneficial effects on albuminuria and renal function in diabetic nephropathy, and state that this treatment might be beneficial when given in combination with standard therapies. This pilot study indicates the need for a larger, sufficiently powered trial of ruboxistaurin, with longer follow-up.

Rebecca Ireland

Original article Tuttle KR *et al.* (2005) The effect of ruboxistaurin on nephropathy in type 2 diabetes. *Diabetes Care* **28:** 2686–2690

Using serum prealbumin concentration to monitor risk in end-stage renal disease patients

Serum albumin concentration can predict risk of mortality and cardiovascular morbidity in end-stage renal disease patients; however, serum proteins such as prealbumin might have additional predictive value. Chertow *et al.* have investigated the association between