Newsletter

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The following three papers, chosen from the October issue of *Nephron Clinical Practice (*Vol. 110, No. 3, 2008*)*, highlight the growing interest in biomarkers in nephrology. In acute kidney injury, CKD as well as in hemodialysis, biomarkers are sought that can lead to early diagnosis - facilitating detection - as well as give prognostic indications over and above those currently in clinical use. With this issue of Nephron News, we encourage readers to share their experience gained with biomarkers in AKI, CKD and HD patients.

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Urinary Sediment Cast Scoring Index for Acute Kidney Injury: A Pilot Study
Lakhmir S. Chawla, Aaron Dommu, Alexandra Berger, Shirley Shih, Samir S. Patel
Nephron Clin Pract 2008;110:c145-c150

Nephrologists from the Division of Nephrology and Hypertension at George Washington University Medical Center have devised a new acute kidney injury (AKI) urinary cast scoring system aimed at evaluating the severity of acute tubular necrosis:

Fig. 2. Granular cast index. GC = Granular casts; ECC = epithelial cell casts; LPF = low-power field (x10). The approach to viewing slide was to search for casts (GCs or ECCs), then view the entire slide.

The authors found the scoring system easy to use and quite reproducible. It is hoped that such a scoring system may undergo further validation and dissemination. It may provide useful prognostic information related to the severity of acute tubular necrosis. Ideally, comparisons of the severity proposed by the scoring system and that of the histological changes should be undertaken. Recently, research and interest have increasingly focused on early diagnostic and prognostic markers of AKI including biomarkers such as Interleukins, Kim-1 (Kidney Injury Molecule-1) and NGAL (Neutrophil Gelatinase-Associate Lipocalin); the Granular cast index described in this publication may be used in conjunction with some of these markers.

Relative Contribution of Morphometric and Functional Indicators of Tubulointerstitial Lesion to Glomerular Diseases Prognosis

Rogerio Barbosa de Deus, Vicente de Paulo Castro Teixeira, Gianna Mastroianni Kirsztajn

Brazilian Nephrologists and pathologists have investigated in this publication the value of urinary Retinol-Binding Protein (RBP) as a marker of tubular damage and interstitial fibrosis in patients with a range of glomerulonephritis. urRBP proved to predict the severity of tubular atrophy as well as interstitial fibrosis. RBP is a small molecular weight protein and the correlation between its urinary excretion and tubular damage is caused by a number of factors including increased filtration, saturation of proximal tubule uptake of that protein or, most likely, decreased proximal tubule reabsorption of filtered RBP by damaged and atrophic tubules. There is currently a controversy as to the extent of glomerular permeability to proteins and the role of proximal tubule dysfunction in proteinuria. This paper highlights the point that tubular damage is associated with significant proteinuria including albuminuria, transferrinuria as well as RBPuria. The role of tubular damage in proteinuria and peptiduria associated with glomerulonephritis is not fully appreciated as it may play a significant role in the severity of the overall urinary protein leak.

Predictive Role of BNP and NT-proBNP in Hemodialysis Patients

Linlin Sun, Yan Sun, Xuezhi Zhao, Chenggang Xu, Dongping Chen, Lin Li, Yiyi Ma, Shu Rong, Changlin Mei

In this publication, the group of Professor Mei in Shanghai confirms previous observations that serum BNP (B type-natriuretic peptide) and NT-proBNP levels predict cardiovascular mortality, myocardial infarction as well as congestive heart failure in patients treated by emodialysis. BNP is released from the myocardium (cardiomyocytes) after injury, and levels are raised in hemodialysis patients. These biomarkers are emerging as powerful predictors of cardiovascular events and mortality in patients on renal replacement therapy.

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