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Biomarkers in AKI and RRT management.

Dae Eun Choi

Chungnam National University Hospital, Korea, Republic of

Around 2000, researches and papers on acute renal injury were increased annually, with the proposal of research to overcome acute renal injury and research on the design of clinical trials for acute renal injury in NIDDK. Around 2010, the biomarkers for early detection of acute kidney injury were studied actively. Various types of markers for acute kidney injury were studied, depending on the location of the kidney injury (glomerulus, tubules) or the mechanism of the kidney injury (Structural damage, functional damage, inflammatory infiltration, cell cycle arrest). Recently, the usefulness of micro RNA and noncoding RNA has been suggested. Especially, NGAL, IL-18, KIM-1, and urine TIMP-2 and IGFBP7 have been evaluated in various clinical situations of acute kidney injury. In addition, there have been reported that AKI often progress to chronic renal failure several years after clinical complete recovery. So, the interest in biomarkers for cell regeneration and fibrosis after acute renal injury is also increasing. Based on these contents, I will discuss the value and usefulness of biomarkers in acute kidney injury and markers currently being used in clinical practice, and introduce new biomarkers.