

## Isolated microscopic hematuria is a risk factor of incident CKD in the general population

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**Background:** Although asymptomatic isolated microscopic hematuria is a common finding in clinical practice, its long-term natural course remains unknown. Therefore, this study aimed to evaluate clinical implication of isolated microscopic hematuria in the general population using a large-scale long-term longitudinal cohort database. **Methods:** This prospective observational cohort study included 8719 subjects who participated in the Korean Genome and Epidemiology Study between 2001 and 2014. Isolated microscopic hematuria was defined as presence of 5 or more red blood cells per high-power field in random urinalysis without evidence of proteinuria or pyuria. The primary outcome of this study was incident CKD, which was defined as the onset of estimate glomerular filtration rate less than 60 mL/min/1.73 m<sup>2</sup>. **Results:** The mean age was 51.7±8.7 years, and 4201 (48.2%) patients were male. The average baseline eGFR was 93.0±13.1 mL/min/1.73 m<sup>2</sup>. During a mean follow-up of 8.6 years, CKD occurred in 677 (7.8%) subjects with microscopic hematuria as compared to those without microscopic hematuria ( $p<0.001$ ). In Kaplan-Meier analysis, cumulative incidence of CKD was significantly higher in the former ( $p=0.044$ ). In Cox regression model, after adjustment of multiple confounders, participants with microscopic hematuria had significantly higher risk of incident CKD than those without microscopic hematuria [hazard ratio, 1.40; 95% confidence interval (CI), 1.07-1.84;  $p=0.014$ ]. These subjects were more likely to develop proteinuria [odd ratio (OR), 1.78; 95% CI, 1.13-2.79;  $p=0.012$ ], or urologic cancer (OR, 7.92; 95% CI, 2.62-23.92;  $p<0.001$ ) during follow-up period. **Conclusions:** Presence of isolated microscopic hematuria is associated with an increased risk of incident CKD in the general population. Therefore, attentive follow-up is warranted in patients with microscopic hematuria for early detection of CKD.

## Effect of self-esteem on hyperkalemia and hyperphosphatemia in hemodialysis patient

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**Introduction:** Chronic disease and comorbidities inherently can be a major obstacle to self-esteem. It makes difficult to understand and deal with patients own disease. End stage renal disease (ESRD) patients who undergo hemodialysis (HD) often encounter with hyperkalemia and hyperphosphatemia. As well as drug compliance, active self-regulation is one of the most important parts of treatment. Thus, we investigated whether the patients' self-esteem score would affect the control of hyperkalemia and hyperphosphatemia. **Material and methods:** Cross sectional design single center study. Patients were enrolled from Korea University Anam hospital hemodialysis unit from May to June 2015. We used Rosenberg self-esteem scale (Rosenberg, 1965) translated in Korean (range 0 to 30, the higher the score, the higher the self-esteem) to assess self-esteem. **Results:** Total 132 patients answered Rosenberg test. The average score was 19, minimum 12 to maximum 25. There were no differences between clinical parameter according to Rosenberg score except age. However, the higher the potassium level (K=4.3mg/dL vs 5.1 mg/dL,  $p=0.04$ ) the higher the score (Rosenberg 18.1 vs 19.3,  $p=0.047$ ). Higher serum potassium group showed significantly increased BUN, creatinine, phosphate level and inter-dialysis weight gain. They also showed lower total CO<sub>2</sub> level. **Conclusion:** Hemodialysis patients who have higher self-esteem score calculated by Rosenberg test showed relatively increased serum potassium level, BUN, creatinine, phosphate, inter dialysis weight gain and metabolic acidosis. Those might represent not just increased uremic burden but positive self-management habits.