



## Urinary orosomuroid 1 protein to creatinine ratio as a potential biomarker for early screening of kidney impairment in type-2 diabetes patients

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### Abstract

Early screening of diabetic kidney disease (DKD) remains a major challenge. Our aim was to evaluate the value of urinary orosomuroid 1 protein (UORM1) in early renal impairment screening in type-2 diabetes patients. Methods: The concentration of UORM1, the UORM1-to-creatinine ratio (UORM1CR), the urinary albumin-to-creatinine ratio (ACR), the alpha-1-microglobulin-to-creatinine ratio (A1MCR), and eGFR were measured in 406 type-2 diabetes patients. Any positive values for ACR, A1MCR, and/or eGFR were considered as indicative of renal impairment. Results: On average, the levels of UORM1 and UORM1CR were about 7-times higher in subjects with renal injury than in those without. Both UORM1 and UORM1CR, when adjusted via logarithm-transformation, were significantly related to ACR, A1MCR, and eGFR levels. The highest correlation was observed between UORM1CR and A1MCR ( $r = 0.85$ ,  $P < 0.001$ ). The cut-off values for UORM1 (2.53 mg/L) and UORM1CR (3.69 mg/g) for the early diagnosis of kidney impairment were obtained from receiver operating characteristic curves. UORM1CR obviously had higher diagnostic efficiency corresponding to 83.26% sensitivity and 90.32% specificity than UORM1. Likewise, its sensitivity was higher than those of ACR, A1MCR and eGFR. Bad glycemic control had the highest risk of increased UORM1CR (odds ratio (OR) = 2.81,  $P < 0.001$ ), while high HDL-C (high-density lipoprotein cholesterol) decreased the risk of increased UORM1CR. Conclusion: UORM1CR (> 3.69 mg/g) has the high diagnostic efficiency for the early screening of renal impairment in type-2 diabetes patients. Furthermore, good glycemic control and high HDL-C might be protective factors against UORM1CR increase

the clinical research on the biomarkers for early screening of diabetic kidney disease. He has published more than 10 papers in reputed journals and has been a peer reviewer for several journals

### Speaker Publications:

1. High ACR level is a strong risk factor for renal tubular impairment in patients with type 2 diabetes: A longitudinal observational study



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### Biography:

Huabin Wang graduated in Clinical Laboratory Diagnostics from Tianjin Medical University in 2015. He works in Central Laboratory, Jinhua Municipal Central Hospital, and commits to