

일반인에서 요계량봉 단백질과 비중값을 이용한 요알부민 크레아티닌 비 추정

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Urine Albumin Creatinine Ratio Estimation By Urine Dipstick Protein and Specific Gravity in General Population

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Introduction and aims: Proteinuria is an evidence of kidney disease and patients with proteinuria have higher cardiovascular risk. Though random urine albumin creatinine ratio (ACR) is standard methods to detect proteinuric patients, urine dipstick test is commonly used for population-based screening tool. We compared urine dipstick protein (DP) test results with ACR values in general population.

Methods: We used the data from the Korean National Health and Nutritional Examination Survey performed between 2009 and 2011. From a total of 29, 235 participants, aged ≥ 16 yr and who had casual urine dipstick and ACR data were selected. Microalbuminuria (MA) was defined as $ACR \geq 30$ mg/g creatinine.

Results: The mean age of the subjects was 50.2 yr (range, 16-97 yr). Among the 5,706 subjects, 54.9% were male and 12.7% were diagnosed with diabetes. Four hundred and thirty six (7.6%) subjects had MA. The table shows the median values and interquartile range of the ACR values according to the DP grades and specific gravities. When DP trace or over was used as selection criteria, the sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) for detection of MA were 52.1%, 88.3%, 27.0% and 95.7% respectively. For subjects with DP trace or over ($n=841$), if DP 1+ (30 mg/dL) and over or trace with SG <1.020 were used, the sensitivity, specificity, PPV and NPV for detection of MA were 78.0%, 83.1%, 63.0% and 91.1% respectively.

Conclusions: Combination of DP and SG value is more useful to estimate ACR and to detect MA cases than DP only in general population.

Key Words: 요검사, 비중, 알부민뇨

Urine dipstick, Specific gravity, Albuminuria

Table. The Median Values and Interquartile Range of the ACR (mg/g creatinine) according to the DP Grades and Specific Gravities

DP	SG	
	<1.020	≥ 1.020
Negative	2 (0, 6)	2 (1, 5)
Trace	30 (6, 87)	4 (2, 11)
1+	340 (206, 584)	148 (32, 320)
2+	789 (529, 1610)	529 (363, 1041)
3+	3268 (1615, 4585)	2487 (343, 4631)