S-B17

한국인에서 이눌린 혈장 클리어런스를 이용한 사구체 여과율 측정

제주한라병원 신장내과[1], 서울대학교병원 내과학교실[2]

이충식[1] · 정지용[2] · 노 한[2] · 김선문[2] · 오국환[2] · 주권욱[2] · 김성권[2] · 김연수[2]

Glomerular Filtration Rate Measurement by Inulin Plasma Clearance in Korean Population

Chungsik Lee[1], Ji Yong Jung[2], Han Ro[2], Sun Moon Kim[2], Kook-Hwan Oh[2]
Kwon Wook Joo[2], Suhnggwon Kim[2], Yonsu Kim[2]

Division of Nephrology[1], Cheju Halla General Hospital Department of Internal Medicine
Department of Internal Medicine[2], Seoul National University College of Medicine

Background : Estimated GFR (eGFR) from serum cratinine is commonly used in the clinical practice. Since the creatinine is affected by age, sex, muscle mass, certain drug, race and tubular function, creatinine based estimate GFR has much limitation in clinical practice. Although, race is an important factor determining eGFR, Asian population was not included in MDRD study. Chinese and Japanese study equation were not applicable to Korean, therefore new coefficient is necessary for Korean population.

Methods : One hundred eleven patients who were older than 18 years, were included. Serum creatinine was assayed by means of the kinetic alkaline picrate method. GFR was calculated from the inulin total body clearance. Systemic inulin clearance after the single intravenous injection was calculated by dividing the infusion dose with the area under the curve, obtained by curve fitting. Inulin clearance were normalized to a standard body surface area of 1.73m2, using the Dubois-Dubois formula for BSA.

Results : A total of 111 subjects with CKD and non CKD were included in the analysis. The mean age of the participants was 49.3±14.6 years. 52 percent were male. Causes of renal disease were diabetes (15.3%), Hypertension (13.5%), glomerular disease (21.6%), polycystic kidney disease (2.7%), and other or unknown disease (27.9%). Mean blood pressure was 100.4±19.2 mmHg, body surface area was 1.68±0.18 m2, body mass index was 24.11±3.24 kg/m^2, serum albumin concentration was 4.32±0.31 g/dL, and serum urea nitrogen concentration was 27.6±18.64 mg/dL, respectively. When measured GFR (mGFR) were plotted against abbreviated MDRD equation (eGFR), eGFR were underestimated at lower GFR. The coefficiency fator between eGFR and mGFR was 0.88. Racial factor for Korean was estimated as 1.11

Conclusion : The modified MDRD equations that were based on the Korean patients with CKD offered significant advantages in different CKD stages and could be applied in clinical practice in Korean patients with CKD.

Key Words : 사구체여과율, 이눌린, 크레아티닌
GFR, Inulin, Creatinine