

Abstract Type : Poster

Abstract Submission No. : PO-1709

Retinal Nonperfusion Area on Ultra-widefield Angiography as a Predictor for Renal Function in Proliferative Diabetic Retinopathy

Kyung Min Kang¹, Myung A Ha¹, Ho Cheol Song¹, Anna Lee², Jae Hyun Park², Jiwon Baek², Ji Won Min¹

¹Department of Internal Medicine-Nephrology, The Catholic University of Korea, Bucheon St. Mary's Hospital, Korea, Republic of

²Department of Ophthalmology, The Catholic University of Korea, Bucheon St. Mary's Hospital, Korea, Republic of

Objectives: To assess the relationship between retinal vascular abnormalities on ultra-widefield fluorescein angiography (UWFA) and renal function in diabetic chronic kidney disease (DM CKD) patients with proliferative diabetic retinopathy (PDR).

Methods: UWFA was performed in 271 eyes (of 139 patients) of patients with type 2 DM, DM CKD and treatment naïve PDR. Serum creatinine level, eGFR, urine A/C ratio, and urine P/C ratio were used as parameters for renal function. On UWFA, retinal capillary nonperfusion area (NPA) was measured in automated manner. The correlation between NPA, NVA, and renal function was analyzed.

Results: The mean duration of DM CKD patients with PDR was 12.54 ± 9.05 years (range 1 – 40). The mean serum creatinine level, eGFR, urine A/C ratio, and urine P/C ratio was 1.54 ± 2.21 mg/dl, 73.05 ± 35.57 ml/min/1.73m², 901.86 ± 2639.61 mg/g, and 2.04 ± 3.05 , respectively. A significant correlation was found between NPA and serum creatinine, eGFR, urine A/C ratio, and urine P/C ratio ($r = 0.413, -0.490, 0.343, 0.452$, respectively; all $P \leq 0.002$). NPA of the macular area also correlated with each renal function parameter ($r = 0.229, -0.506, 0.320$, and 0.338 , respectively; all $P \leq 0.038$).

Conclusions: Larger nonperfusion area was associated with worse renal function. Retinal NPA on UWFA can be used to predict renal function in DM CKD patients with PDR.