

Abstract Type : Poster
Presentation No. : POT 009

The association between plasma PCSK9 concentrations and chronic kidney disease

Ha Yeon Kim, Minah Kim, Young-Eun Jo, Rim Lee, Myeongsu Park, Jeong Ho Lee, Chang Seong Kim, Eun Hui Bae, Seong Kwon Ma, Soo Wan Kim
Department of Internal Medicine-Nephrology, Chonnam National University Hospital, Korea, Republic of

Objectives: Dyslipidemia commonly present in patients with chronic kidney disease (CKD) presenting with unique characteristics. The proprotein convertase subtilisin/kexin type 9 (PCSK9) is a regulator of the LDL receptor and plasma cholesterol concentrations. We studied the association of circulating PCSK9 concentrations with both glomerular filtration rate (eGFR) and serum lipid parameters in patients at different stage of CKD.

Methods: We evaluated plasma PCSK9 concentrations measured by ELISA in 90 non-dialysis patients at different stage of CKD.

Results: The mean plasma levels of PCSK9 were 309.7 ± 74.6 ng/ml in the 90 subjects. Plasma PCSK9 concentrations have a positive correlation with UACR ($r=0.261$, $P=0.029$) and triglycerides ($r=0.316$, $P=0.007$), but not with total cholesterol, eGFR ($P=0.058$), HDL-C ($P=0.319$), LDL-C ($P=0.101$), ApoA1 ($P=0.380$), ApoB ($P=0.805$), ApoA1/B ($P=0.893$) and CRP ($P=0.457$). In the patients with UACR ≥ 1 g/gCr, plasma PCSK9 levels increase compared to patient with UACR <1 g/gCr, (299.3 ± 73.2 ng/ml vs. 361.9 ± 60.3 ng/ml, $P=0.008$). The plasma PCSK9 levels were independently associated with existence of diabetes and statin/fibrate medication. The concentration of PCSK9 according to CKD stages was 273.0 ± 56.5 ng/ml in the CKD stage 1, 317.5 ± 98.4 ng/ml in the CKD stage 2, 306.6 ± 68.7 ng/ml in the CKD stage 3, 333.1 ± 85.6 ng/ml in the CKD stage 4, 306.0 ± 64.3 ng/ml in the CKD stage 5 without dialysis, respectively. The levels of PCSK9 in patients with CKD stage 1 were lower than those of other stages ($P=0.032$).

Conclusions: These data demonstrate that plasma PCSK9 concentrations are related to proteinuria, but not associated to eGFR. These data suggest that kidney function per se does not affect significantly PCSK9 metabolism. Further studies are needed to the potential for biomarker of PCSK9.