



# CARDIOVASCULAR STRATIFICATION BY PLASMA SCLEROSTIN IN DIALYSIS PATIENTS

Kyubok Jin<sup>1</sup>, Yaerim Kim<sup>1</sup>, Seong Sik Kang<sup>1</sup>, Woo Yeong Park<sup>1</sup>,  
Seungyeup Han<sup>1</sup>, Sung Bae Park<sup>1</sup>, Sihyung Park<sup>2</sup>, Yang-Wook Kim<sup>2</sup>, Jeongsoo Yoon<sup>3</sup>

<sup>1</sup>Department of Internal Medicine, Keimyung University School of Medicine, Daegu, Korea

<sup>2</sup>Department of Medicine, Inje University, Haeundae Paik Hospital, Busan, Korea

<sup>3</sup>Yoon's internal medicine clinic

## BACKGROUND

Vascular calcification, which is caused by Wnt pathway, is related to cardiovascular mortality in dialysis patients. Sclerostin is known to be an endogenous antagonist of bone calcification with Wnt pathway.

However, its roles and meanings in vascular calcification are unclear. This study tested the hypothesis that increased plasma sclerostin is related with coronary arterial calcification score (CCS) in dialysis patients.

## METHODS

Sclerostin, hsCRP, lipid levels, calcium, phosphate, and iPTH levels were measured in the fasting plasma samples from 20 hemodialysis and 20 peritoneal dialysis patients, and 20 healthy and- and gender-matched controls. CCSs were measured by the coronary computed tomography angiogram. Cardiovascular risk was assumed by CCS (0; non-identified, 1~10; minimal, 1~100; mild, 101~400; moderate, >400; high).

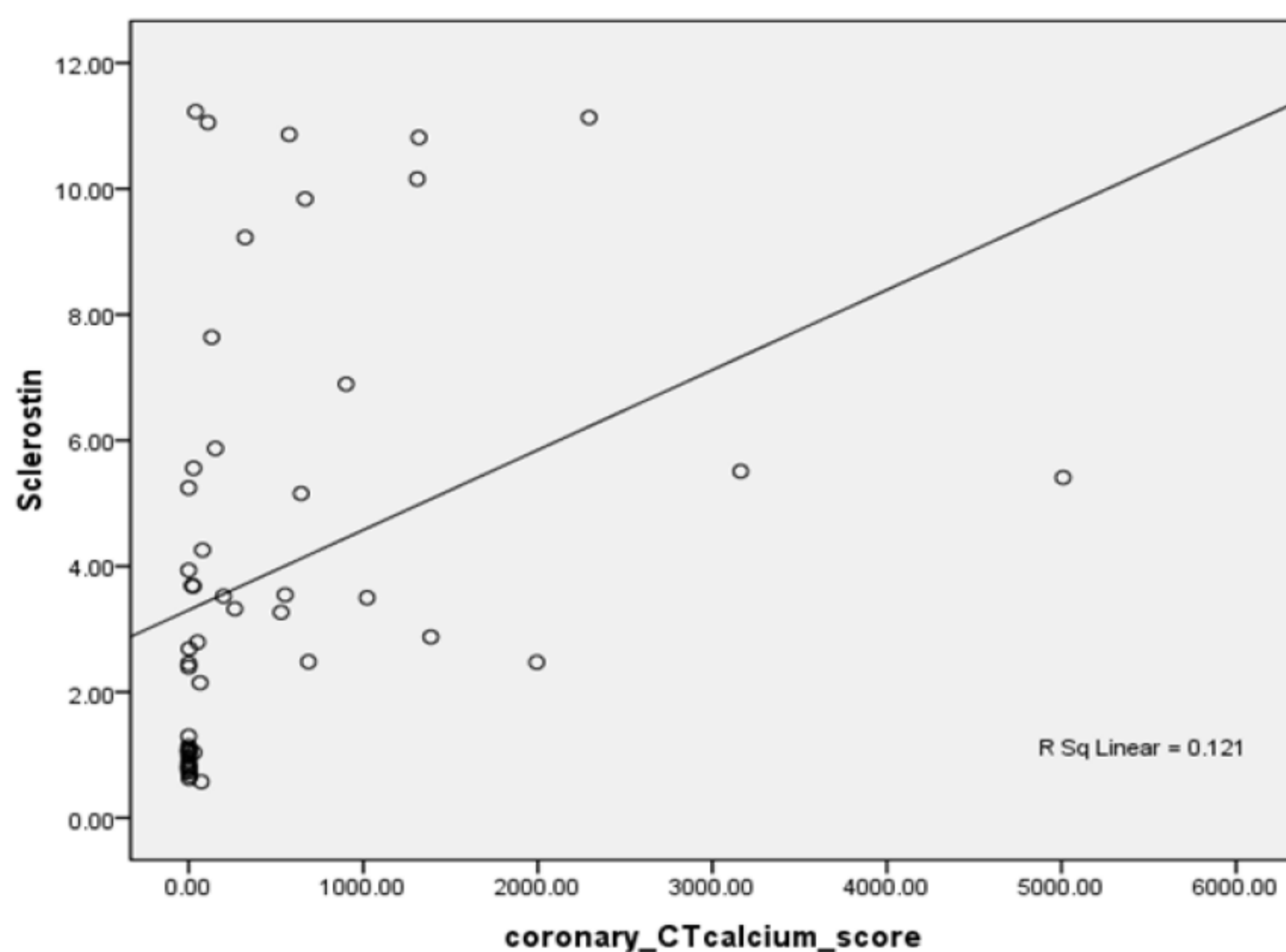


Fig 1. Positive correlation between sclerostin and coronary calcium scores (r = 0.657, p < 0.01)

## RESULTS

Plasma sclerostin concentrations in the hemodialysis (6.06 ± 3.10 ng/mL) and peritoneal dialysis (5.28 ± 3.20 ng/mL) groups were significantly higher than that in the control group (0.91 ± 0.19 ng/mL). CCS in the hemodialysis (1112.2 ± 385.6) was significantly higher than those in the peritoneal dialysis (414.9 ± 129.4) and control group (5.98 ± 4.04). Both sclerostin and CCS were increased according to the dialysis vintage (r = 0.759 and r = 0.662, p < 0.001). The level of plasma sclerostin was related to CCS (r = 0.657, p < 0.001) even controlling for age, sex, dialysis vintage and levels of blood sugar, phosphate, calcium.

## CONCLUSION

In our cohort of dialysis patients, higher level of sclerostin showed higher burden of coronary calcification and therefore sclerostin might be a candidate biomarker for cardiovascular risk assessment in dialysis patients.

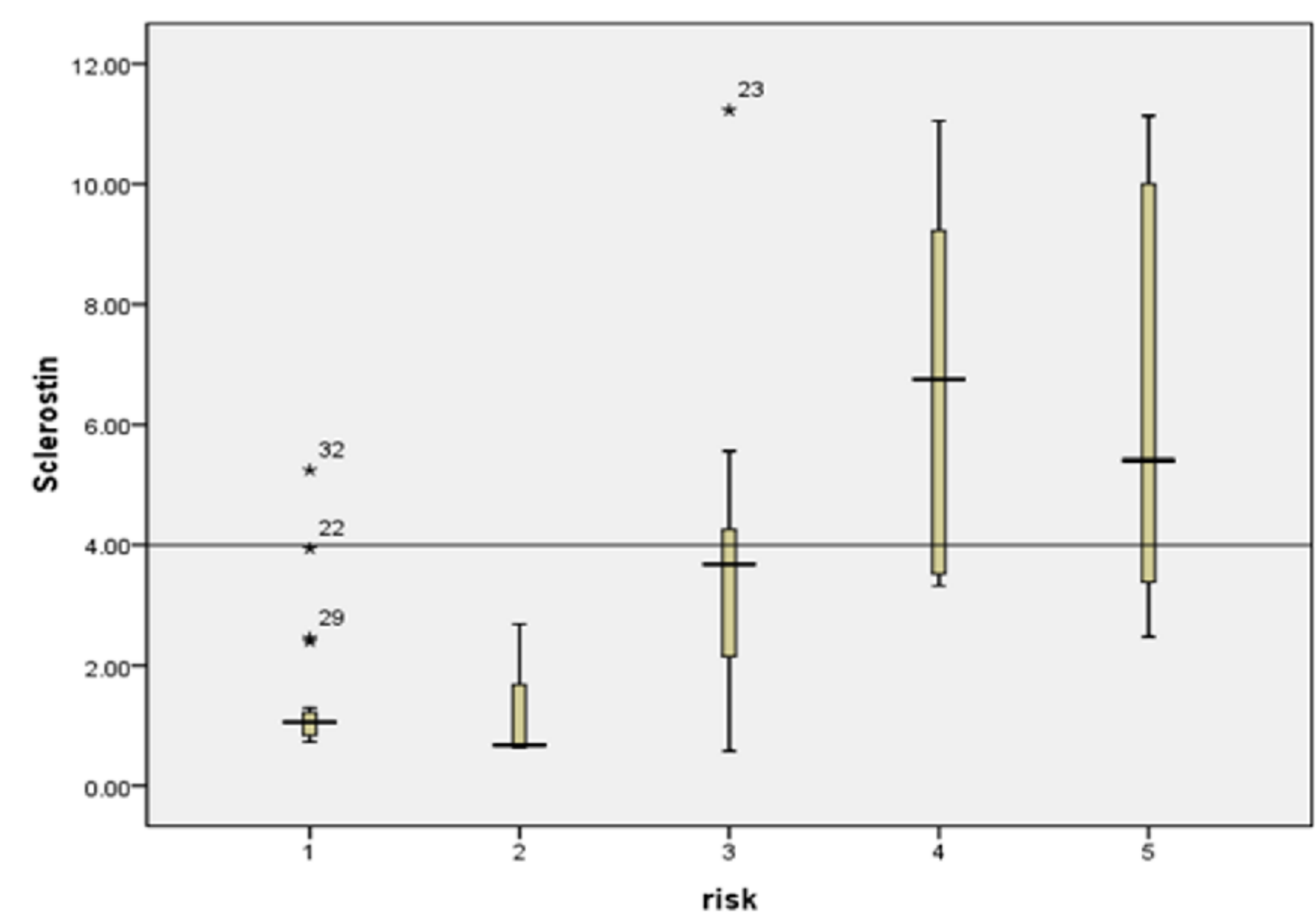


Fig 2. Cardiovascular risk with sclerostin (1: no risk, 2: minimal risk, 3: mild risk, 4: moderate risk, 5: high risk)



Keimyung University  
Dongsan Medical Center

