# Serum sclerostin levels are associated with aortic valve calcification in maintenance haemodialysis patients

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## OBJECTIVES

Sclerostin is a protein expressed by osteocytes and has been shown to be a good predictor for bone formation in patients with chronic kidney disease.
Sclerostin was only recently identified in the subendothelial layer of the human aortic intima, suggesting a possible role in the pathogenesis of aortic valve calcification (AVC).
The aim of this study was to evaluate the relationship between serum sclerostin levels and AVC in maintence haemodialysis patients.

## METHODS

101 patients (48 females and 53 males, mean age: 59±12 years, mean haemodialysis vintage: 56±28 months) were included in a cross-sectional study. Serum sclerostin levels were measured by ELISA (R&D Systems, Minneapolis, MN).
All patients underwent unenhanced, electrocardiography-triggered dual-source computed tomography of the heart.

## RESULTS

Patients with AVC showed significantly higher serum sclerostin levels as compared to patients with no calcified aortic valves (2813±1171 vs 1362±1190 pg/mL, p<0.001).
The patients are grouped according to quartiles of serum sclerostin levels as follows: 1st quartile (25): serum sclerostin levels≤370 pg/ml; 2nd quartile (25-75): 370<serum sclerostin levels<2282 pg/ml; 3rd quartile: serum sclerostin levels≥2282 pg/ml.
The frequencies of AVC were 36% (5 in 14 cases), 58% (30 in 52 cases) and 94% (33 in 35 cases), respectively (p<0.0001 for the trend).
In the multivariable regression analysis, age (B=0.46, p=0.015) and serum sclerostin levels (B=0.35, p=0.044) were independent factors for AVC.

## CONCLUSIONS

Further studies are needed to identify sclerostin as a pathogenetic factor or a suitable biomarker or a theurapetic target for AVC in maintenance hemodialysis population.

## REFERENCES:

1-Cejka D, Herberth J, Branscum AJ, Fardo DW, Monier-Faugere MC, Diarra D, Haas M, Malluche HH.
Clin J Am Soc Nephrol. 2011 Apr;6(4):877-82.
2-Didangelos A et al. Moll Cell Proetomics 2010; 9(9):2048-62.


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