

Vascular calcification in chronic kidney disease

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Propositions belonging to the thesis:

'Vascular calcification in chronic kidney disease: vitamin K deficiency and new mediators'

Maastricht, 14 November 2023

1. Vascular calcification is a pathological process increased in patients with CKD, which is still not fully elucidated (*This thesis*)
2. Vascular calcification is mediated by multiple mediators that under normal conditions stay in balance, but when the amount of inducers is higher than the inhibitors, vascular calcification is developed (*This thesis*)
3. The enzymes involved in the recycling cycle of vitamin K, a potent inhibitor of vascular calcification, as well as its converting enzymes are strongly downregulated in CKD leading to an increased degree of calcification in kidneys (*This thesis*)
4. VIF has been discovered as a new potent inhibitor of vascular calcification (*This thesis*)
5. Vitamin K supplementation strategies shall be adapted, taking into account vitamin K status and metabolism in CKD patients. VIF on the other hand could play an important role as a new drug to modulate vascular calcification in CKD patients (*Societal impact*)
6. Cardiovascular diseases are the major cause of death worldwide nowadays (*WHO, 2021*)
7. Accumulation of uremic toxins, known as uremic syndrome, leads to increased morbidity and mortality in CKD (*Vanholder, Toxins 2018*)
8. Cardiorenal syndrome is a pathologic condition in which acute or chronic dysfunction of the heart or kidney induces acute or chronic dysfunction of the other organ (*Wang, Aging 2020*)
9. "*La paciencia es la madre de la ciencia*" (Patience is the mother of science, Spanish proverb)
10. Just keep swimming, just keep swimming, just keep swimming, swimming, swimming (Dory, Finding Nemo)

Sofía de la Puente-Secades