

Beyond lipids and smoking

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Beyond lipids and smoking – the nephrologist's perspective on cardiovascular disease associated with CKD

1. Cardiovascular calcifications are a hallmark of chronic kidney disease.
2. Chronic kidney disease goes along with disturbances in mineral and bone metabolism – the so-called chronic kidney disease – mineral and bone disorder (CKD-MBD) syndrome. Patients with chronic kidney disease most often die from cardiovascular causes, not due to the kidney disease itself.
3. FGF23 is one of the prototypic biomarkers of CKD-MBD and as such, FGF23 links bone, heart, vascular, and renal disease. Is FGF23 a marker and / or a mediator in CKD-MBD? This is an evolving field.
4. Vitamin K is a major player in a very important anti-calcification protection system, i.e. Matrix-Gla protein (MGP). Biological structures that should not calcify, e.g. the vascular wall or cartilage, contain a lot of MGP. MGP requires vitamin K for posttranslational activation.
5. Vitamin K is required for MGP activity. In other words, vitamin K deficiency promotes calcification of the vascular wall.
6. CKD-MBD is a complex syndrome, in which fighting only one promoting factor would ignore the complexity of the disease. Calciphylaxis is an example of a complex, multifactorial disease at the interface of nephrology and cardiology (and some other disciplines).
7. In future, FGF23 measurements might serve as an early warning signal regarding the development of CKD-MBD.
8. Vitamin K deficiency used to be under-recognized in the past, because the former vitamin K focus was only the activity of the coagulation system.
9. According to the current status of vitamin K and FGF23 research as elucidated in this thesis, the most condensed dietary advice coming out of the present thesis is: “Eat more broccoli, but without sausages”.
10. Meine drei wichtigsten Publikationen sind Franca, Lorenz und Thea - im Jahr 2000, 2004 und 2009! Und ich bin stolz auf jahrelanges peer-review der drei zusammen mit Iris!