

Identification and characterization of the mediators of the calcification paradox

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Propositions

Belonging to the thesis:

Identification and characterization of the mediators of the calcification paradox

Shruti Bhargava

Maastricht, 21st March 2022

1. Diseases such as CKD, hypertension, cardiovascular disease, bone mineralization disease or genetic manifestations such as osteoporosis and diabetes have vascular calcification as a common manifestation. (This thesis).
2. The active process of vascular calcification coincides with vascular smooth muscle cell phenotype switching towards osteoblast-like cells, supported by inorganic phosphate. (This thesis).
3. CBF (1-8) shifts the calcification paradox by promoting bone mineralization and inhibiting vascular calcification in VDN rats. (This thesis).
4. The potential clinical application of CBF (1-8) is the prevention of eminent vascular calcification in patients undergoing dialysis by replenishing CBF (1-8) in plasma. (This thesis).
5. Identification and characterization of mediators of the calcification paradox opens up new avenues to prevent and treat vascular calcification and osteoporosis at the same time, reducing the strain on healthcare facilities caused by CVD and CKD. (Societal impact)
6. Dietary supplementation of magnesium inhibits abdominal vascular calcification in an experimental rat model of CKD. (Leenders et al., NDT 2022)
7. Uremic toxins induce vascular ageing, with vascular calcification as one of the ageing features (Kyriakidis et al., Toxins 2021)
8. Science is not just a bunch of facts, it evolves with the evolution of human intelligence, curiosity and dedication.
9. It does not do to dwell on dreams and forget to live. (Dumbledore, from Harry Potter).
10. It is the mind of man alone that is the cause of his bondage or freedom. (Chanakya).
11. Try to remember; always put purpose ahead of your feelings. (Star Wars)