|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ref | Time | doi | PMID | Relation | Variable |  | Gender | Calcification | Complications | CKD stages | sample |
| (1) | 2001 | 10.1159/000046119 |  | associates | Osteopontin | r=0.749 (age- and sex-matched) | x | Aortic calcification index (ACI) |  | 5D (HD) | 71 |
| (2) | 2013 | 10.1186/1471-2369-14-221 | 24119158 | causes | Male sex | All patients: OR 4.218 (1.403-14.207)  eGFR < 30: OR 4.167 (1.050-20.178) | v | Abdominal aortic calcification (AAC) (Kauppila Index) |  | 3-4 | 178 |
|  |  |  |  |  |  | Lack of a FEP-FGF23 correlation in patients with severe AAC (KI > 5) suggested a role for an impaired phosphaturic response to FGF23 but not to PTH in AAC. Logistic and zero-inflated analysis confirmed the independent association of age, CKD stage, male gender and CP with AAC, and also identified a threshold FEP/FGF23 ratio of 1/3.9, below which the chances for a patient of presenting severe AAC increased by 3-fold. |  |  |  |  |  |
| (3) | 2017 | 10.1186/s12882-017-0480-2 | 28253835 | complications | AAC score | OR 1.19 (1.07–1.30) | v | AAC | Coronary artery disease | 5D | 90 |
|  |  |  |  |  | Male gender | Univariate: 2.59 (1.00–6.68)  Multivariate: 2.73 (0.95–7.82) |  |  |  |  |  |
| (4) | 2012 | 10.1371/journal.pone.0039241 | 22723973 | complications | Male gender | β = -0.34 (-13.45– -4.48) | v | AAC | Left ventricular mass index | 3 | 120 |
|  |  |  |  |  | Mean femoral Z-score | β = -0.23 (-4.75– -0.85) |  |  |  |  |  |
|  |  |  |  | associates | Male gender | +24% compared to no calcification |  |  |  |  |  |
| (5) | 2009 | 10.1111/j.1525-1594.2009.00814.x | 19681840 | causes | Male gender | HR 0.87 (0.56–0.91, p=0.87) | v | Coronary artery calcification score (CACS) |  | 5D (HD) | 102 |
|  |  |  |  |  | HD vintage | HR 0.85 (0.58–0.95)  Independent of other influencing factors, HD vintage and serum PTH levels were significant determinants of low bone mass and T-scores in all anatomical sites whereas fetuin-A was an independent predictor in proximal radius, femoral neck, and trochanter |  | CACS |  |  |  |
|  |  |  |  |  | Serum PTH | Standard regression coefficient -0.21– -0.33 |  | Bone mineral densities (BMD) |  |  |  |
|  |  |  |  |  | Fetuin-A | Standard regression coefficient -0.29– -0.41 |  | BMD |  |  |  |
| (6) | 2021 | 10.1186/s12882-021-02251-y | 33541279 | complications | Male gender | β = 31.0 | v |  | Maximal ergometry workload (WMAX) | 4-5 | 174 |
|  |  |  |  |  | AAC score | β = -1.44 |  | AAC | WMAX% < 50% |  |  |
|  |  |  |  |  |  | AAC and TnT showed fair predictive power for WMAX% less than 50% of the expected value with AUCs of 0.70 and 0.75, respectively. |  |  |  |  |  |
| (7) | 2013 | 10.1186/1471-2369-14-122 | 23758931 | causes | Gender | β = -0.163 | v | Common carotid intima-media thickness (ccIMT) |  | 5D (HD) | 81 |
| (8) | 2014 | 10.1159/000360230 | 24847332 | complications | Male gender | HR 2.354 (1.371 – 4.042) | v | AAC | Cardiovascular mortality | 5D (HD) | 712 |
|  |  |  |  |  | AAC Grade 3 | HR 2.497 (1.237 – 5.043) |  |  | Cardiovascular mortality |  |  |
|  |  |  |  |  |  | HR 1.604 (1.058 – 2.431) |  |  | All-cause mortality |  |  |
| (9) | 2017 | 10.1159/000360230 | 27988970 | causes | Male gender | total iliac: 1.00 (0.25-1.75) vs. 0.50 (0.13-1.13) | v | Iliac vascular calcification grade |  | 5T | 205 |
|  |  |  |  |  | Male gender | external iliac: 1.00 (0.00-1.50) vs. 0.00 (0.00-0.50) |  |  |  |  |  |
|  |  |  |  |  | Male gender | left common iliac: 1.00 (0.50-2.00) vs. 1.00 (0.00-1.88) |  |  |  |  |  |
|  |  |  |  |  |  | \*Not adjusted for age |  |  |  |  |  |
|  |  |  |  |  | Older than 55 yrs | 1.25 (0.50-2.00) vs. 0.50 (0.00-1.16) |  | Total iliac calcification (without distal aortic segment) |  |  |  |
|  |  |  |  |  |  | Median total calcification score was 3 (2.2-3) in the patients declined for renal  transplantation, with similar results in the different regions of the iliac arteries. |  |  |  |  |  |
| (10) | 2020 | 10.1186/s12882-020-1710-6 | 32033584 | causes | Male gender | OR 4.4 (1.6–11.1) | v | Inferior epigastric artery & CACS |  | 5-5D | 149 |
|  |  |  |  |  |  | Male -x copeptin: β = −0.08 (0.31) |  |  |  |  |  |
|  |  |  |  |  | Copeptin (1-SD increase) | OR 1.6 (1.1–2.6) |  |  |  |  |  |
|  |  |  |  |  |  | Mechanisms of vascular calcification in CKD. In the setting of uraemic milieu, activation of renin-angiotensin and vasopressin systems,  upregulation of sodium-dependent phosphate transporter Pit-1 promotes osteochondrocytic transformation and apoptosis of vascular smooth muscle cell (VSMC) and, in consequence, accelerated vascular calcification |  |  |  |  |  |
|  |  |  |  |  | Higher Age (1-SD increase) | OR 2.5 (1.5–4.1) |  |  |  |  |  |
|  |  |  |  |  | Diabetes | OR 23.2 (2.5–210.5) |  |  |  |  |  |
| (11) | 2011 | 10.2215/CJN.03910411 | 21940840 | Associates | Female gender | Female -> Osteoprotegerin: 10.2% (0.2%– 21.3%) | v |  |  | 1-5 | 226 |
|  |  |  |  | Causes | Osteoprotegerin (OPG) | Reference |  | Aortic pulse wave velocity |  |  |  |
|  |  |  |  |  |  | Tertile 2 (5.05 to 7.45 pmol/L): 1.06 (0.97– 1.15) |  |  |  |  |  |
|  |  |  |  |  |  | Tertile 3 (7.46 to 22.31 pmol/L): 1.10 (1.01– 1.20) |  |  |  |  |  |
| (12) | 2015 |  | 26629071 | associates | 5-hydroxyvitamin D | r = 0.193 | x | Kauppila score |  | 5D (HD) | 126 |
| (13) | 2019 | doi.org/10.1186/s12882-019-1235-z | 30777028 | causes | Total body bone mineral density (tBMD) in female | β = −0.27, se = 0.12, p = 0.03 | v | CACS |  | 5 | 174 |
|  |  |  |  |  | BMD at legs in female | β = −0.28, se = 0.12, p = 0.02 |  |  |  |  |  |
|  |  |  |  |  |  | Multivariate generalized linear model  (GLM) analysis adjusted for age, diabetes and hsCRP showed that in females per SD higher CAC score (1057 AUs) was  predicted by either per SD (0.13 g/cm2) lower tBMD or per SD (0.17 g/cm2) lower BMD at legs. **No such associations were found in male** **ESRD patients**. |  |  |  |  |  |
| (14) | 2017 | 10.1111/eci.12718 | 28036114 | Causes | Male gender | After adjustments for confounders by GLM (age, gender, BMI, diabetes, inflammation), only age, male gender, diabetes and statins remained significantly related to high CAC score. | v | CACS |  | 5D-5T | 240 |
|  |  |  |  |  |  | Model with hsCRP: estimate = −0.38, se = 0.11, p = 0.005 |  |  |  |  |  |
|  |  |  |  |  |  | Model with IL-6: estimate = 0.40, se = 0.13, p = 0.002 |  |  |  |  |  |
|  |  |  |  |  |  | Model with TNF but without statins: estimate = 0.35, se = 0.13, p = 0.008 |  |  |  |  |  |
|  |  |  |  |  | Statins | Model with hsCRP: estimate = 0.29, se = 0.11, p = 0.009 |  |  |  |  |  |
|  |  |  |  |  |  | Model with IL-6: estimate = 0.44, se = 0.14, p = 0.001 |  |  |  |  |  |
|  |  |  |  | Modifier | Statins | 0 (0-531) AUs to 273 (0-1256) AUs after 1.5 years of RRT |  | CACS |  |  |  |
|  |  |  |  | Complications | CACS | HR 1.52 (1.12-2.06) |  |  | Mortality |  |  |
| (15) | 2015 | 10.3109/0886022X.2015.1077316 | 26336882 | complications | Simple  vascular calcification score (SVCS) | https://www.tandfonline.com/na101/home/literatum/publisher/tandf/journals/content/irnf20/2015/irnf20.v037.i09/0886022x.2015.1077316/20151009/images/medium/irnf_a_1077316_f0002_c.jpg | v | SVCS | Vascular access flow (DU-Qa) | 5D (HD) | 50 |
|  |  |  |  |  | Male gender | P = 0.575 |  |  |  |  |  |
| (16) | 2008 |  | 19259046 | causes | Male gender | +27% compared to female (80/91 vs. 36/59) | v | Arterial intimal & media calcification (AIC & AMC) |  | 5D (HD) | 150 |
|  |  |  |  |  |  | The present results suggest a few emerging risk factors for the occurrence of arterial  calcifications, especially of AIC in our HD patients, such as age older than 55, male gender, diabetes, as well as higher CRP (> 4.5 mg/L), blood leucocytes (> 6.5 × 109L), corrected total serum Ca (> 2.35 mmol/L), serum triglycerides (> 1.8 mmol/L), PP (> 60 mmHg) and BMI (> 23 kg/m2). |  |  |  |  |  |
|  |  |  |  |  |  | Our findings of significantly higher percentages of ACA in patients who were younger (under  55 yrs at inclusion and 45 yrs at the start of HD), predominantly female, without diabetes and with higher percentages of K/DOQI guideline recommended levels for serum Ca, are supportive of the previous reports [11, 15, 17]. |  |  |  |  |  |
| (17) | 2010 | 10.2215/CJN.02560310 | 20576822 | associates | Male gender | R = -0.181, p = 0.016 | v | Gensini score |  |  |  |
|  |  |  |  |  |  | The Gensini score values significantly correlated in univariate analysis with gender (R = -0.181, P = 0.016), presence of hyperension (R = 0.203, P = 0.007), HDL cholesterol level (R = -0.158, P = 0.047), eGFR (R = -0.315, P 0.001), iPTH (R = 0.152; P = 0.044), FGF 23 (R = 0.868; P = 0.001), and fetuin A levels (R = 0.491; P = 0.001) but not with the vitamin D values. |  |  |  |  |  |
| (18) | 2008 | 10.1111/j.1365-2362.2008.02032.x | 19021697 | complications | Low fetuin-A | HR 2.3 (1.2–4.5) | x | Fetuin-A inhibits vascular calcification | Mortality | 5D (HD) | 222 |
|  |  |  |  |  |  | Patients with low fetuin-A levels (< median) had higher mortality (Hazard ratio ‘HR’ 2·2; CI 1·4–3·5, P< 0·001), but this association was lost after adjustment for age, gender, comorbidities score, dialysis vintage and inflammation (CRP > median). In inflamed patients with low fetuin a significantly independent association with mortality (HR 2·3; CI 1·2–4·5, P= 0·01) was observed compared to non-inflamed patients with high fetuin-A, after adjusting for the same variables. |  |  |  |  |  |
| (19) | 2016 | 10.15386/cjmed-515 | 27004031 | complications | male gender | HR 14.96 (2.09-106.98) | v | vascular or  other soft tissue calcifications (VC) by plain film | all-cause mortality | 5D (HD) | 92 |
|  |  |  |  |  | VC score | HR 1.387 (1.095-1.757) |  |  | Cardiovascular mortality |  |  |
| (20) | 2012 | 10.1093/ndt/gfs219 |  | causes | Male gender | T ratio = 2.15, p = 0.04 | v | Aortic calcification score (ACS) |  | 3-5 | 106 |
| (21) | 2013 | 10.1016/j.ejmhg.2013.07.003 |  | Causes | Male gender |  | ? | SVCS |  | 5-5T | 73 |
|  |  |  |  |  |  | VC was significantly associated with older age, male gender, longer HD duration, lower albumin, higher LDL-c, higher carotid plaques and lower BMD at the lumbar spine and the T-score value but had no significant association with the following parameters: duration of transplantation, blood pressure, total cholesterol, TG, Ca, PO4, Ca·PO4, iPTH, CRP, fetuin A, e-GFR and IMT. Also no significant association was seen between fetuin-A gene polymorphism and VC. Patients with VC had higher CRP than those without but did not reach a significant value. (Table 10). | P = 0.056 不應該相關，但是內文說相關 |  |  |  |  |
| (22) | 2015 | 10.1093/ndt/gfv200.30 |  | Causes | Gender? | HR 0.50 (0.28-0.87) | v | Adragao calcification scores | All-cause mortality | 5D (HD) | 220 |
|  |  |  |  |  |  |  |  |  |  |  |  |
| (23) | 2009 | 10.1159/000221064 | 19468238 | Causes | Male gender | 2.75 (1.41–5.38) | v | Adragao calcification score |  |  |  |
|  |  |  |  |  |  | 2.32 (1.19–4.52) |  | Composite score |  |  |  |
| (24) | 2014 | 10.1007/s00223-013-9811-x | 24193439 | complications | Male gender | HR 0.225 (0.100-0.509) | ? |  | All-cause mortality | 5D | 120 |
|  |  |  |  |  |  | HR 0.043 (0.008-0.241) |  |  | cardiocerebrovascular  mortality |  |  |
| (25) | 2005 | 10.1093/ndt/gfi236 | 16263735 | causes | Male gender | Calcification tertile 1/2/3: 18 (46%) / 28 (71%) / 39 (81%), P<0.001 | v | Multi-slice spiral CT scanning of a 5 cm standardized  segment of superficial femoral artery |  | 4-5D | 134 |
| (26) | 1988 | 10.1159/000184864 | 3340252 | Associates | Male gender | Simple covariance coefficient = 1.97, p < 0.01 | V | Linear calcifications of the abdominal aorta and of the iliac and femoral arteries |  | 5D (HD) | 24 |
| (27) | 2008 | 10.1053/j.jrn.2008.04.003 | 18721733 | ? | Female gender | Vitamin D deficient vs. sufficient: 53% vs. 28%, p < 0.05 | ? | semiquantitative (0 to 6) score of vascular calcification by using x-rays, in accordance with London et al. |  | 5D (HD) | 253 |
|  |  |  |  |  |  | Vitamin D deficiency was reported to be  associated with cardiovascular calcification, 5 |  |  |  |  |  |
| (28) | 2002 | 10.1053/ajkd.2002.30955 | 11774125 | modifiers | Male gender | Indeed, this observation is reminiscent of our own observation regarding the **extension of calcification** assessed prospectively on 3 years in 24 hemodialysis patients who never received vitamin D derivatives. The calcifications were measured on lateral and frontal X rays of lumbar spine and pelvis at the level of aorta, iliac, and femoral arteries.' This extension was exponential, and simple covariance analysis showed that the main significant risk factors for extension were **male gender**, age (only in male patients) | v | Extension of calcification |  | 5D (HD) | 24 |
| (29) | 2014 | 10.1371/journal.pone.0114358 | 25479288 | causes | Male gender | OR 4.92 (2.07–11.70) | v | CACS |  | 2-5 | 117 |
|  |  |  |  |  | Pericardial fat | OR 1.85 (1.00-3.42) |  |  |  |  |  |
| (30) | 2013 | 10.1186/1471-2369-14-263 | 24289833 | complications | Aortic arch calcification score (AoAC) | Score 1 1.52 [0.99, 2.34] 0.06 | x | AoAC | Mortality | 5D (HD) | 824 |
|  |  |  |  |  |  | Score 2 1.22 [0.72, 2.05] 0.47 |  |  |  |  |  |
|  |  |  |  |  |  | Score 3 2.49 [1.28, 4.82] 0.01 |  |  |  |  |  |
| (31) | 2011 |  | 22259897 | Associates | Gender | No association between VC and gender | x | Hand X-rays |  | 5D (HD) | 43 |
| (32) | 2019 |  | 31122190 | Associates? | Female gender | OPG tertile 1/2/3: 62.5% / 55.0% / 32.%, p = 0.008\* | v | OPG |  | 5D (HD) | 120 |
|  |  |  |  |  |  | Bone loss -> OPG -> calcification |  |  |  |  |  |
| (33) | 2014 | 10.1186/1471-2369-15-190 | 25465028 | Associates? | Gender (M/F) | Low vs High sclerostin: 24/22 vs. 31/14, p = 0.103 | x | Sclerostin |  | 5D (HD) | 91 |
| (34) | 2011 |  | 22013298 | Associates? | Gender | No association with superficial temporal artery calcification |  |  |  |  |  |
| (35) | 2018 | 10.1186/s12882-018-0872-y | 29558928 | Causes | Male gender | OR 3.29 (1.27–8.53) | v | Abdominal aortic calcification index |  | 5D (HD) | 184 |
| (36) | 2018 | 10.1080/0886022X.2018.1455588 | 29619867 | Complications | Male gender | HR 2.89, p = 0.357 | x | aortic arch calcification | Cardiovascular event | 5T | 37 |
|  |  |  |  |  |  | Multivariate linear regression revealed that **donor age, donor gender, and recipient eGFRdischarge (R-squared 0.65, p = 0.002)** better predict eGFR1year than AoAC combined with recipient eGFRdischarge (R-squared 0.35, p = 0.006). During 1-year follow-up, four (10.81%) patients experienced **cardiovascular events**, which were predicted by **PWV ratio** (HR 7.549, p = 0.045), but **not related to AoAC score** (HR 1.044, p = 0.158). |  |  |  |  |  |
| (37) | 2014 | 10.1111/nep.12210 | 24447254 | causes | Male gender | Kidney transplant, univariate: OR 2.36 (1.13–4.91), p = 0.02\* | v | Total vascular calcification score |  | 5-5T | 261 |
|  |  |  |  |  |  | Kidney transplant, multivariate: OR 2.49 (0.87–7.14), p = 0.09 |  |  |  |  |  |
|  |  |  |  |  |  | CKD 5-5D, univariate: 1.44 (0.71–2.91), p = 0.32 |  |  |  |  |  |
|  |  |  |  |  |  | CKD 5-5D, multivariate: 2.02 (0.71–5.78), p = 0.19 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | All-cause mortality |  |  |
|  |  |  |  |  |  | Patients with 25D <or= 16.7 ng/ml (median) had a significantly lower survival rate than patients with 25D >16.7 ng/ml (mean follow-up, 605 +/- 217 d; range, 10 to 889; P = 0.05). Multivariate adjustments (included age, gender, diabetes, arterial pressure, CKD stage, phosphate, albumin, hemoglobin, aortic calcification score and PWV) confirmed 25D level as an independent predictor of all-cause mortality. |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

**References**

1. Nitta K, Ishizuka T, Horita S, Hayashi T, Ajiro A, Uchida K, et al. Soluble osteopontin and vascular calcification in hemodialysis patients. Nephron. 2001;89(4):455–8.

2. Craver L, Dusso A, Martinez-Alonso M, Sarro F, Valdivielso JM, Fernandez E. A low fractional excretion of Phosphate/Fgf23 ratio is associated with severe abdominal Aortic calcification in stage 3 and 4 kidney disease patients. BMC Nephrol. 2013;14.

3. de Bie MK, Buiten MS, Rotmans JI, Hogenbirk M, Schalij MJ, Rabelink TJ, et al. Abdominal aortic calcification on a plain X-ray and the relation with significant coronary artery disease in asymptomatic chronic dialysis patients. BMC Nephrol. 2017;18(1):82.

4. Chue CD, Wall NA, Crabtree NJ, Zehnder D, Moody WE, Edwards NC, et al. Aortic calcification and femoral bone density are independently associated with left ventricular mass in patients with chronic kidney disease. PLoS One. 2012;7(6).

5. Kirkpantur A, Altun B, Hazirolan T, Akata D, Arici M, Kirazli S, et al. Association Among Serum Fetuin-A Level, Coronary Artery Calcification, and Bone Mineral Densitometry in Maintenance Hemodialysis Patients. Artif Organs. 2009;33(10):844–54.

6. Lankinen R, Hakamäki M, Metsärinne K, Koivuviita N, Pärkkä JP, Saarenhovi M, et al. Association of maximal stress ergometry performance with troponin T and abdominal aortic calcification score in advanced chronic kidney disease. BMC Nephrol. 2021 Feb 4;22(1):50.

7. Pateinakis P, Papagianni A, Douma S, Efstratiadis G, Memmos D. Associations of fetuin-A and osteoprotegerin with arterial stiffness and early atherosclerosis in chronic hemodialysis patients. BMC Nephrol. 2013;14.

8. Lee C Te, Huang CC, Hsu CY, Chiou TTY, Ng HY, Wu CH, et al. Calcification of the aortic arch predicts cardiovascular and all-cause mortality in chronic hemodialysis patients. CardioRenal Med. 2014;4(1):34–42.

9. Kahn J, Ram LM, Eberhard K, Groselj-Strele A, Obermayer-Pietsch B, Mueller H. Calcification score evaluation in patients listed for renal transplantation. Clin Transplant. 2017;31(3).

10. Golembiewska E, Qureshi AR, Dai L, Lindholm B, Heimbürger O, Söderberg M, et al. Copeptin is independently associated with vascular calcification in chronic kidney disease stage 5. BMC Nephrol. 2020 Feb 7;21(1):43.

11. Scialla JJ, Leonard MB, Townsend RR, Appel L, Wolf M, Budoff MJ, et al. Correlates of osteoprotegerin and association with aortic pulse wave velocity in patients with chronic kidney disease. Clin J Am Soc Nephrol. 2011;6(11):2612–9.

12. Wang F, Wu S, Ruan Y, Wang L. Correlation of serum 25-hydroxyvitamin D level with vascular calcification in hemodialysis patients. Int J Clin Exp Med. 2015;8(9):15745–51.

13. Chen Z, Qureshi AR, Brismar TB, Ripsweden J, Haarhaus M, Barany P, et al. Differences in association of lower bone mineral density with higher coronary calcification in female and male end-stage renal disease patients. BMC Nephrol. 2019;20.

14. Chen Z, Qureshi AR, Parini P, Hurt-Camejo E, Ripsweden J, Brismar TB, et al. Does statins promote vascular calcification in chronic kidney disease? Eur J Clin Invest. 2017;47(2):137–48.

15. Guedes Marques M, Botelho C, Maia P, Ibeas J, Ponce P. Doppler ultrasound and calcification score: Improving vascular access surveillance. Ren Fail. 2015;37(9):1425–9.

16. Gelev S, Spasovski G, Trajkovski Z, Damjanovski G, Amitov V, Selim G, et al. Factors associated with various arterial calcifications in haemodialysis patients. Prilozi. 2008;29(2):185–99.

17. Kanbay M, Nicoleta M, Selcoki Y, Ikizek M, Aydin M, Eryonucu B, et al. Fibroblast growth factor 23 and fetuin A are independent predictors for the coronary artery disease extent in mild chronic kidney disease. Clin J Am Soc Nephrol. 2010;5(10):1780–6.

18. Metry G, Stenvinkel P, Qureshi AR, Carrero JJ, Yilmaz MI, Bárány P, et al. Low serum fetuin-A concentration predicts poor outcome only in the presence of inflammation in prevalent haemodialysis patients. Eur J Clin Invest. 2008;38(11):804–11.

19. Moldovan D, Rusu C, Kacso IM, Potra A, Patiu IM, Gherman-Caprioara M. Mineral and bone disorders, morbidity and mortality in end-stage renal failure patients on chronic dialysis. Clujul Med. 2016;89(1):94–103.

20. Capusa C, Stancu S, Barsan L, Ilyes A, Dorobantu N, Petrescu L, et al. Are mineral metabolism abnormalities predictors of vascular calcifications in non-dialysis chronic kidney disease? Nephrol Dial Transplant. 2012;27:ii152.

21. Maharem DA, Gomaa SH, El Ghandor MK, Mohamed EI, Matrawy KA, Zaytoun SS, et al. Association of serum fetuin-A and fetuin-A gene polymorphism in relation to mineral and bone disorders in patients with chronic kidney disease. Egypt J Med Hum Genet. 2013;14(4):337–52.

22. Schlieper G, Frisch B, Djuric Z, Dimkovic N, Floege J. Sp711Comprehensive Comparison of Cardiovascular Imaging Tools and Biomarkers for Risk Prediction in Hd Patients: Imt Beets Them All. Nephrol Dial Transplant. 2015;30(suppl\_3):iii613–4.

23. Schlieper G, Brandenburg V, Djuric Z, Damjanovic T, Markovic N, Schurgers L, et al. Risk factors for cardiovascular calcifications in non-diabetic Caucasian haemodialysis patients. Kidney Blood Press Res. 2009;32(3):161–8.

24. Zhang DL, Wang LY, Sun F, Zhou YL, Duan XF, Liu S, et al. Is the dialysate calcium concentration of 1.75 mmol/L suitable for Chinese patients on maintenance hemodialysis? Calcif Tissue Int. 2014;94(3):301–10.

25. Sigrist M, Bungay P, Taal MW, McIntyre CW. Vascular calcification and cardiovascular function in chronic kidney disease. Nephrol Dial Transplant. 2006;21(3):707–14.

26. Renaud H, Atik A, Herve M, Moriniere P, Hocine C, Belbrik S, et al. Evaluation of vascular calcinosis risk factors in patients on chronic hemodialysis: lack of influence of calcium carbonate. Nephron. 1988;48(1):28–32.

27. Jean G, Charra B, Chazot C. Vitamin D Deficiency and Associated Factors in Hemodialysis Patients. J Ren Nutr. 2008;18(5):395–9.

28. Oprisiu R, Bunea D, Tarek S, Hedi B, Fournier A. Progression of vascular calcification and dyslipidemia in patients on chronic hemodialysis. Vol. 39, American Journal of Kidney Diseases. 2002. p. 209.

29. Harada PHN, Canziani ME, Lima LM, Kamimura M, Rochitte CE, Lemos MM, et al. Pericardial fat is associated with coronary artery calcification in non-dialysis dependent chronic kidney disease patients. PLoS One. 2014;9(12):e114358–e114358.

30. Bohn E, Tangri N, Gali B, Henderson B, Sood MM, Komenda P, et al. Predicting risk of mortality in dialysis patients: a retrospective cohort study evaluating the prognostic value of a simple chest X-ray. BMC Nephrol. 2013;14(1):263.

31. Al-Rifai R, Arabi A, Masrouji R, Daouk M. Prevalence of peripheral vascular calcifications in patients on chronic hemodialysis at a tertiary care center in Beirut: A pilot study. J Med Liban. 2011;59(3):117–21.

32. Hou J-S, Lin Y-L, Wang C-H, Lai Y-H, Kuo C-H, Subeq Y-M, et al. Serum osteoprotegerin is an independent marker of central arterial stiffness as assessed using carotid-femoral pulse wave velocity in hemodialysis patients: a cross sectional study. BMC Nephrol. 2019;20(1):N.PAG-N.PAG.

33. F.L.C. G, R.M. E, L.M. DR, F.G. G, F.G. Z, R.B. O, et al. Serum sclerostin is an independent predictor of mortality in hemodialysis patients. BMC Nephrol. 2014;15(1):190.

34. Anwar Z, Zan E, Carone M, Ozturk A, Sozio SM, Yousem DM. Superficial temporal artery calcification in patients with end-stage renal disease: Association with vascular risk factors and ischemic cerebrovascular disease. Indian J Radiol Imaging. 2011;21(3):215–20.

35. Okamoto T, Hatakeyama S, Kodama H, Horiguchi H, Kubota Y, Kido K, et al. The relationship between poor nutritional status and progression of aortic calcification in patients on maintenance hemodialysis. BMC Nephrol. 2018;19.

36. Laucyte-Cibulskiene A, Boreikaite E, Aucina G, Gudynaite M, Rudminiene I, Anisko S, et al. Usefulness of pretransplant aortic arch calcification evaluation for kidney transplant outcome prediction in one year follow-up. Ren Fail. 2018;40(1):201–8.

37. Vipattawat K, Kitiyakara C, Phakdeekitcharoen B, Kantachuvesiri S, Sumethkul V, Jirasiritham S, et al. Vascular calcification in long-term kidney transplantation. Nephrology. 2014;19(4):251–6.