Table 3.

Table 4. Adjusted risk of complications of vascular calcification or gender difference

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ref | Time | doi | PMID | Country | Relation | Variable |  | Gender | Calcification | Complications | CKD stages | sample |
| (1) | 2017 | 10.1186/s12882-017-0480-2 | 28253835 | Netherlands | 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) |  |  |  |  |  |
| (2) | 2012 | 10.1371/journal.pone.0039241 | 22723973 | UK | 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) |  |  |  |  |  |
| (3) | 2021 | 10.1186/s12882-021-02251-y | 33541279 | Finland | complications | Male gender | B = 31.0 | v |  | Maximal ergometry workload (WMAX) | 4-5 | 174 |
|  |  |  |  |  |  | AAC score | B = -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. |  |  |  |  |  |
| (4) | 2014 | 10.1159/000360230 | 24847332 | Taiwan | 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 |  |  |
| (5) | 2017 | 10.1111/eci.12718 | 28036114 | Sweden | Complications | CACS | HR 1.52 (1.12-2.06) | v | CACS | Mortality | 5D-5T | 240 |
| (6) | 2015 | 10.3109/0886022X.2015.1077316 | 26336882 | Portugal? | 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 |  |  |  |  |  |
| (7) | 2008 | 10.1111/j.1365-2362.2008.02032.x | 19021697 | Sweden | 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. |  |  |  |  |  |
| (8) | 2016 | 10.15386/cjmed-515 | 27004031 | Romania | 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 1.30 (1.05-1.59) |  |  |  |  |  |
|  |  |  |  |  |  |  | HR 1.387 (1.095-1.757) |  | Cardiovascular mortality |  |  |  |
|  |  |  |  |  |  |  | Multivariable Cox analysis of CdV mortality used  as covariates age, gender, HD vintage, presence of DM,  VC score, presence of ROD, Ca in dialysis solution, oral  Ca salts, vitamin D treatment, serum Ca, P, iPTH, ALP,  creatinine, Hb, cholesterol, trygliceride, CRP, albumin,  ferritin levels, URR, spKt/V baseline renal disease, initial  CdV disease. The method was Forward LR stepwise.  VC score (HR=1.387; 95.0% CI 1.095-1.757; p=0.007)  and URR (HR=0.942; 95.0% CI 0.888-0.999; p=0.046)  remained in the ecuation. **Increased VC score and decreased**  **URR represent risk factors for CDV mortality.** |  |  |  |  |  |
| (9) | 2014 | 10.1007/s00223-013-9811-x | 24193439 | China | complications | Male gender | HR 0.225 (0.100-0.509) | ? |  | All-cause mortality | 5D | 120 |
|  |  |  |  |  |  |  | HR 0.043 (0.008-0.241) |  |  | cardiocerebrovascular  mortality |  |  |
| (10) | 2013 | 10.1186/1471-2369-14-263 | 24289833 | Canada | 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 |  |  |  |  |  |
| (11) | 2014 | 10.1186/1471-2369-15-190 | 25465028 | Brazil | Complications? | Male sex (versus  female) | HR 0.82 (0.39-1.75), p = 0.620 | x |  | Mortality | 5D (HD) | 91 |
|  |  |  |  |  |  | Sclerostin | HR 2.18 (1.41-3.38) |  |  |  |  |  |
| (12) | 2018 | 10.1080/0886022X.2018.1455588 | 29619867 | Lithuania | 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). |  |  |  |  |  |
| (13) | 2014 | 10.1159/000368476 | 25571879 | Japan | Complications | Male gender | Univariate: HR 1.502 (0.624-4.163), p = 0.3772 |  |  | Cardiovascular mortality | 5D (HD) | 301 |
|  |  |  |  |  |  |  | Univariate: HR 1.485 (0.746-3.215), p = 0.2690 |  |  | All-cause mortality |  |  |
|  |  |  |  |  |  | AoAC Grade 1 | Univariate: HR 2.838 (1.053-8.920), p = 0.0390 |  |  | Cardiovascular mortality |  |  |
|  |  |  |  |  |  |  | Multivariate: HR 1.731 (0.616-5.623), p = 0.3065 |  |  |  |  |  |
|  |  |  |  |  |  | AoAC Grade 2+3 | Univariate: HR 4.636 (2.794-9.149), p = 0.0011 |  |  |  |  |  |
|  |  |  |  |  |  |  | Multivariate: HR 2.629 (1.455-5.124), p = 0.016 |  |  |  |  |  |
|  |  |  |  |  |  | AoAC Grade 2+3 | Univariate: HR 3.409 (2.015-5.781), p = 0.0261 |  |  | All-cause mortality |  |  |
|  |  |  |  |  |  |  | Multivariate: HR 1.699 (1.052-2.680), p = 0.0222 |  |  |  |  |  |
| (14) | 2011 | 10.1093/ndt/gfr089 | 21414968 | The Netherlands | Complications | Female gender | B = 3.14, β = 0.23, 95% CI -0.05–6.32, p = 0.05 | v |  | Capillary recruitment | 5D | 35 |
|  |  |  |  |  |  |  | Male -> rarefaction |  |  |  |  |  |
| (15) | 2013 | 10.1159/000334597 | 22143191 | Belgium | complications | Gender | Parameter estimate = 1.07001, p = 0.0182, HR 2.915 (1.2–7.08) |  |  | Cardiovascular events | 5T | 115 |
|  |  |  |  |  |  | AC present | Parameter estimate = 3.07957, p = 0.0024, HR 21.749 (2.97–159.4) |  | Aortic calcification |  |  |  |
|  |  |  |  |  |  | AC score | Parameter estimate = 0.16250, p <0.0001, HR 1.176 (1.11–1.244) |  |  |  |  |  |
| (16) | 2012 | 10.1159/000334597 | 22143191 | Belgium | complications | Female gender | Univariate: Parameter estimate = –7.9, p = 0.05, R2 = 0.014 | v |  | Prolonged corrected QT interval | 5T | 193 |
|  |  |  |  |  |  | Aortic calcification score | Univariate: Parameter estimate = 1.12, p= 0.0017, R2 = 0.045 |  | Aortic calcification score |  |  |  |
|  |  |  |  |  |  |  | In multivariate linear regression analysis, female gender, a higher aortic calcification score, hematocrit and PTH levels and lower calcium and potassium levels were found to be independently  associated with QTc. These variables explain 21% of the variability of QTc. Similar associations were found for JTc. |  |  |  |  |  |
| (17) | 2018 | 10.1007/s11255-017-1758-9 | 29236239 | Thailand | Complications | Male gender | CKD 2-5: HR 2.35 (0.93–5.91) |  |  | Mortality | 2-5T | 419 |
|  |  |  |  |  |  |  | CKD 5D: 1.14 (0.49–2.65) |  |  |  |  |  |
|  |  |  |  |  |  |  | KT: 1.36 (0.41–4.52) |  |  |  |  |  |
|  |  |  |  |  |  | AAC > 6 | CKD 2-5: HR 2.35 (1.05–5.25)\* |  | AAC |  |  |  |
|  |  |  |  |  |  |  | CKD 5D: HR 1.84 (0.77–4.39) |  |  |  |  |  |
|  |  |  |  |  |  |  | KT: HR 2.93 (0.9–9.22) |  |  |  |  |  |
|  |  |  |  |  |  | pelvic arterial calcification (PAC) > 1 | CKD 2-5: HR 3.04 (1.33–6.96)\*\* |  | PAC |  |  |  |
|  |  |  |  |  |  |  | CKD 5D: HR 2.64 (1.14–6.08)\* |  |  |  |  |  |
|  |  |  |  |  |  |  | KT: HR 13.9 (3.74–51.3)\*\* |  |  |  |  |  |
| (18) | 2006 | 10.1159/000095362 | 16940716 | Italy | Complications | Male gender | RR 0.85 (0.81–0.76), coefficient = –2.01, p = 0.001 | v |  | QT dispersion (QTd) | 4-5D (HD) | 46 |
|  |  |  |  |  |  | TC score ??? | RR 11.2 (8.22–16.7), coefficient = 1.571, p = 0.0001 |  |  |  |  |  |
|  |  |  |  |  |  |  | TC score到底是甚麼? |  |  |  |  |  |
| (19) | 2014 | 10.1007/s11255-013-0620-y | 24318369 | Japan | Complications | CS | OR 9.9759x1030 (12.528–7.9429x1060) |  | Calcification score |  | 5D (HD) | 49 |
|  |  |  |  |  |  | Male gender | OR 23.194 (1.452–370.372) |  |  |  |  |  |
| (20) | 2013 | 10.1093/ndt/gft039 | 23605174 | Belgium | complications | Male gender | HR 0.55 (0.25–1.19), p = 0.13 |  |  | All-cause mortality | 5D (HD) | 100 |
|  |  |  |  |  |  | Sclerostin | HR 0.33 (0.15–0.73) |  |  |  |  |  |
| (21) | 2016 | 10.1016/j.bone.2016.08.007 | 27519971 | Sweden | complications | CAC (>100 vs. ≤100 AUs) | RR 2.86 (1.26–6.45) 0.01 |  |  | Low Vertebral bone density (VBD) | 5 | 231 |
|  |  |  |  |  |  | Male gender | RR 1.22 (0.62–2.39), p = 0.57 |  |  |  |  |  |
| (22) | 2009 | 10.1093/ndt/gfp253 | 19491380 | UK | complications | Male gender | OR 8.06 (1.34–48.450) |  |  | All-cause mortality | 4-5D | 134 |
|  |  |  |  |  |  | OPG >25 pmol/L | OR 5.31(1.35–20.88) |  |  |  |  |  |
| (23) | 2005 | 10.1111/j.1523-1755.2005.00345.x | 15882283 | Sweden | Complications | Male gender | RR 1.30 (0.83-2.02), NS |  |  | All-cause mortality | 5 | 258 |
|  |  |  |  |  |  |  | RR 1.32 (0.77–2.25), NS |  |  | Cardiovascular mortality |  |  |
|  |  |  |  |  |  | Fetuin-A | 2.58 (1.64–4.07) |  |  | All-cause mortality |  |  |
|  |  |  |  |  |  |  | 2.63 (1.51–4.59) |  |  | Cardiovascular mortality |  |  |
| (24) | 2005 | 10.1111/j.1523-1755.2005.00233.x | 15780108 | France | Complications | Male = 1, female = -1 | β = −0.48, HR 0.62, p = 0.0043 |  |  | First fatal or nonfatal cardiovascular event | 5D (HD) | 179 |
|  |  |  |  |  |  | Log (calciﬁcation score) | β = 0.90, HR 2.46, p <0.0001 |  |  |  |  |  |
|  |  |  |  |  |  |  | 18% of variance explained. |  |  |  |  |  |
| (25) | 2016 | 10.5301/jva.5000591 | 27516144 | Singapore | Complications | Male gender | OR 1.99, SD = 0.22 |  |  | Arteriovenous fistula secondary patency | 5D | 436 |
|  |  |  |  |  |  | Calcified radial artery | Secondary patency vs. primary failure: 12% vs. 25%, p = 0.002 |  |  |  |  |  |
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