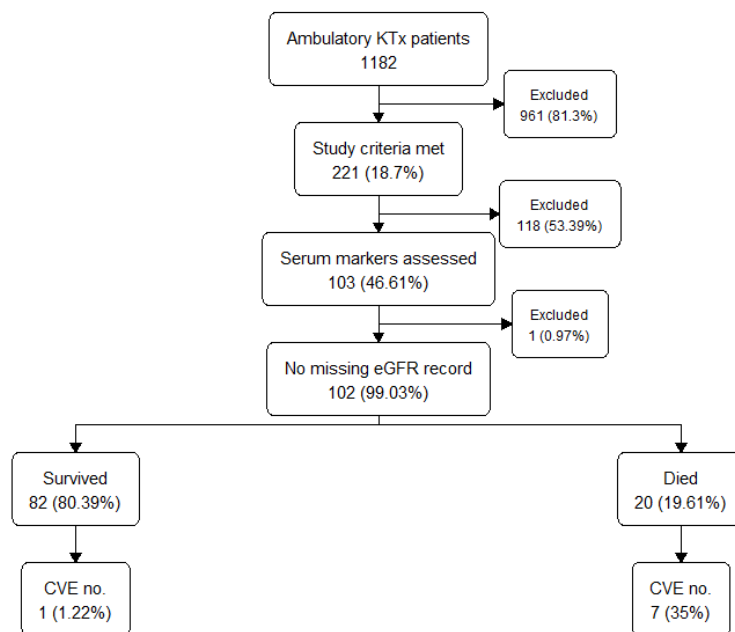


## Supplementary material

*Batko K, Sączek A, Banaszekiewicz M, et al. Comprehensive assessment of cardiovascular-kidney-metabolic (CKM) syndrome: Novel tools for assessment of cardiovascular risk and kidney outcomes in long-term kidney transplant patients. Pol Heart J. 2024.*

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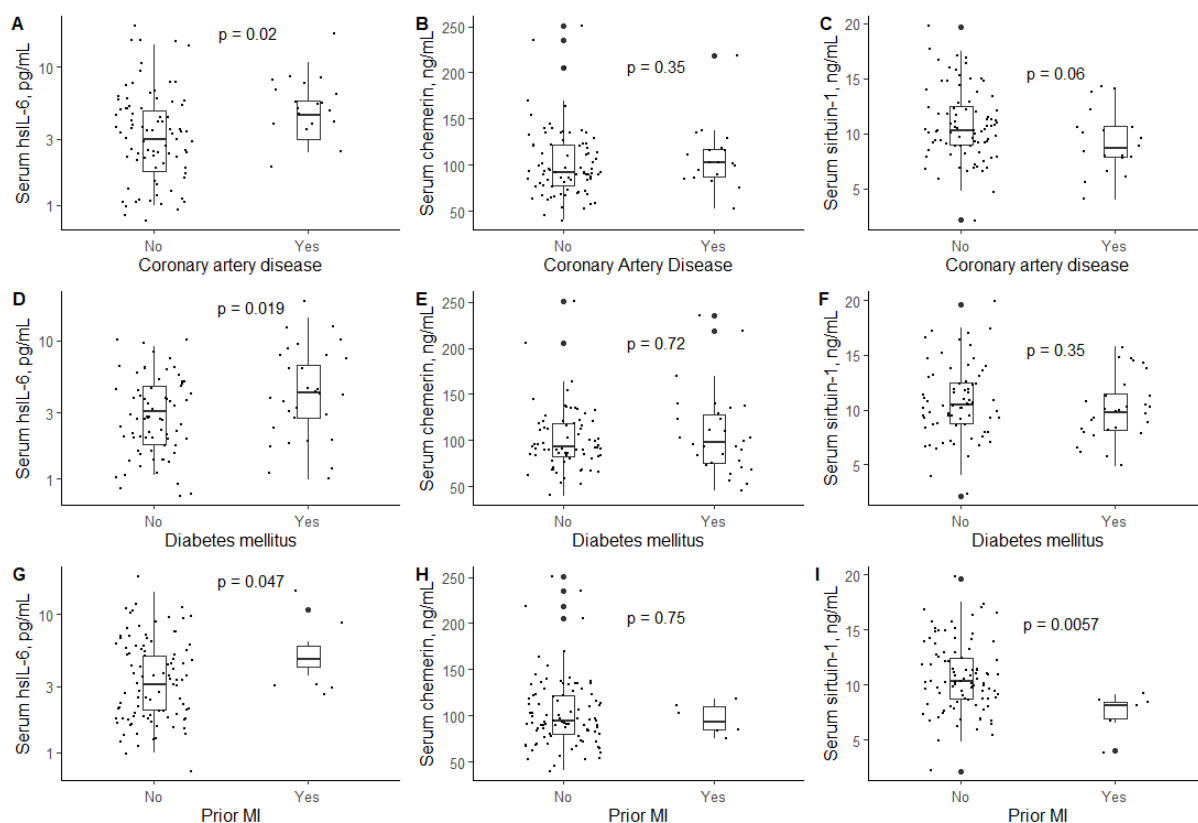


**Figure S1.** Flowchart of patient recruitment for this study

The study inclusion criteria were: 1) Kidney graft survival for at least 24 months, and 2) No evidence for history of rejection episodes within the first 12 months post kidney transplantation, which was further referred to as acute rejection, regardless of underlying etiology, whether humoral, cellular or of unknown origin

The study exclusion criteria were: 1) Presence of active infection, whether acute signs or symptoms of infection upon first (study) visit or evidence of chronic infection (e.g., serology), 2) Positive history of hepatitis B or C, or HIV infection, 3) Post-parathyroidectomy status or neoplastic disease, which parallels our earlier studies for evaluation of novel whole blood and serum markers in the context of cardiovascular disease and kidney disorders

For a more detailed description of the control group, including biochemical parameters, see Woziwodzka K, Małyżko J, Koc-Żórawska E, et al. Transgelin-2 in multiple myeloma: a new marker of renal impairment? *Molecules*. 2021; 27(1): 79



**Figure S2.** Boxplot comparison of serum hsIL-6, chemerin and sirtuin-1 concentrations stratified by presence of coronary artery disease, prior MI and diabetic status in long-term kidney transplant recipients

Abbreviations: hsIL-6, high sensitivity interleukin-6; MI, myocardial infarction

**Table S1.** Descriptive statistics comparing mean and standard deviation (SD) for serum concentrations of the studied markers. *P*-value and mean difference are based on the Monte-Carlo permutation-based t test

|  | <b>Kidney<br/>transplant<br/>cohort<br/>(n = 102)</b> | <b>Reference<br/>subjects<br/>(n = 32)</b> | <b><i>P</i>-value</b> | <b>Mean difference</b> |
|--|---|--|-----------------------|------------------------|
|  |   |  |                       |                        |

| Variable  | Mean (SD)   | Mean (SD)   | After perm | After perm   |
|-----------|-------------|-------------|------------|--------------|
| hsIL-6    | 4.07 (2.87) | 1.92 (1.63) | <0.001     | 2.15 (0.56)  |
| Chemerin  | 102 (35.2)  | 77.5 (19.0) | <0.001     | 24.16 (6.76) |
| Sirtuin-1 | 10.6 (3.25) | 5.08 (1.59) | <0.001     | 5.53 (0.76)  |

**Table S2.** Analysis of variance and pairwise comparisons across cardiovascular kidney metabolic (CKM) stage based on t test with *P* value adjusted using Benjamin-Hochberg

| Marker        | CKM stage | Stage 0 | Stage 1 | Stage 2/3 | Omnibus test      |
|---------------|-----------|---------|---------|-----------|-------------------|
| log(hsIL-6)   | Stage 1   | 0.40    | –       | –         | 0.03 <sup>a</sup> |
|               | Stage 2/3 | 0.12    | 0.56    | –         | 0.04 <sup>b</sup> |
|               | Stage 4   | 0.03    | 0.12    | 0.12      | –                 |
| Sirtuin-1     | Stage 1   | 0.88    | –       | –         | 0.27 <sup>a</sup> |
|               | Stage 2/3 | 0.88    | 0.88    | –         | 0.19 <sup>b</sup> |
|               | Stage 4   | 0.76    | 0.76    | 0.29      | –                 |
| log(Chemerin) | Stage 1   | 0.38    | –       | –         | 0.06 <sup>a</sup> |
|               | Stage 2/3 | 0.05    | 0.37    | –         | 0.04 <sup>b</sup> |
|               | Stage 4   | 0.05    | 0.37    | 0.70      | –                 |

<sup>a</sup>Analysis of variance (ANOVA); <sup>b</sup>Permutation-based ANOVA

**Table S3.** Analysis of variance and pairwise comparisons across chronic kidney disease (CKD) stage based on t test with *P*-value adjusted using Benjamin–Hochberg

| Marker        | CKD stage | V–IV   | IIIB | IIIA | II   | Omnibus test        |
|---------------|-----------|--------|------|------|------|---------------------|
| log(hsIL-6)   | IIIB      | 0.68   | –    | –    | –    | 0.27 <sup>a</sup>   |
|               | IIIA      | 0.56   | 0.70 | –    | –    | 0.32 <sup>b</sup>   |
|               | II        | 0.41   | 0.41 | 0.56 | –    |                     |
|               | I         | 0.41   | 0.41 | 0.41 | 0.56 |                     |
| Sirtuin-1     | IIIB      | 0.50   | –    | –    | –    | 0.55 <sup>a</sup>   |
|               | IIIA      | 0.50   | 0.91 | –    | –    | 0.88 <sup>b</sup>   |
|               | II        | 0.50   | 0.91 | 0.91 | –    |                     |
|               | I         | 0.50   | 0.50 | 0.50 | 0.50 |                     |
| log(Chemerin) | IIIB      | 0.04   | –    | –    | –    | <0.001 <sup>a</sup> |
|               | IIIA      | <0.001 | 0.04 | –    | –    | <0.001 <sup>b</sup> |

|  |    |        |        |      |      |  |
|--|----|--------|--------|------|------|--|
|  | II | <0.001 | <0.001 | 0.18 | –    |  |
|  | I  | <0.001 | <0.01  | 0.29 | 0.92 |  |

<sup>a</sup>Analysis of variance (ANOVA); <sup>b</sup>Permutation-based ANOVA