

Better indexation of left ventricular mass to predict adverse clinical outcomes in ND-CKD patient

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**Background/Aims:** There have been no studies which compared the clinical impact of indexations of left ventricular mass (LVM) on adverse clinical outcomes. **Methods:** The database of a large-scaled multicenter prospective study in Korea of 2238 patients enrolled from 2011–2016 was reviewed. After excluding 225 patients with missing data on anthropometric and echocardiographic measurements, and clinical outcomes, the study included 2013 non-dialysis CKD patients. The main indexations were body surface area (BSA) and height to the 2.7 power (height<sup>2.7</sup>). The main outcome was composites of renal and cardiovascular events and all-cause mortality. **Results:** During a mean of 2.3 years, 428 patients developed composite outcomes (21.3%). With the progression of LVM, cardiovascular risk profiles worsened. The area under the curve (AUC) of LVM (0.631) for composite outcome was smaller than LVMs indexed with BSA (0.654, P < 0.001) and height<sup>2.7</sup> (0.647, P = 0.041). Although LVM and its two indexations were significantly associated with composite outcome, only LVM indexed with BSA was significantly associated with all-cause mortality in multivariate Cox regression analysis. Although left ventricular hypertrophy (LVH) defined by BSA and height<sup>2.7</sup> indexations were significantly associated with composite outcome, LVH defined by BSA indexation only was independently associated with renal event, whereas LVH defined by height<sup>2.7</sup> indexation only was not associated with renal event. **Conclusions:** Indexation of LVM improved the predictability of future adverse outcomes. In non-dialysis CKD patients, BSA may be a better indexation of LVM than height<sup>2.7</sup> to predict future adverse outcomes better.

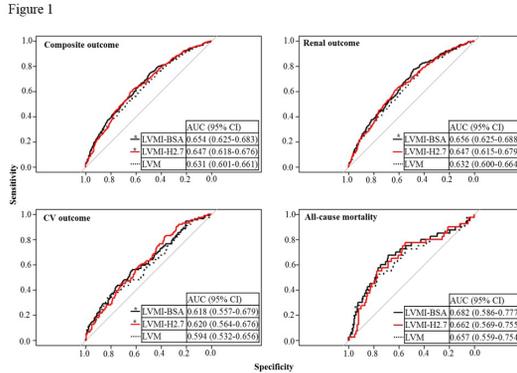


Figure 1. Receiver operator characteristic curve of left ventricular mass and its indexations for adverse clinical outcomes. AUC, area under the curve; CI, confidence interval; LVM, left ventricular mass; LVM-BSA, left ventricular mass index by body surface area; LVM-H2.7, left ventricular mass index by height to the 2.7 power; LVM, left ventricular mass; CV, cardiovascular. \* mean P < 0.05 when compared to LVM using DeLong's test. The P-values of the comparison between AUCs of LVM-BSA and LVM-H2.7 were all above 0.05 for composite, renal, CV outcomes and all-cause mortality.

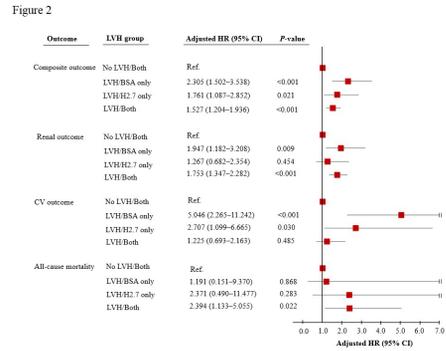


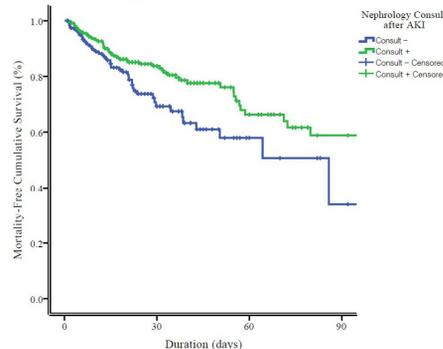
Figure 2. Hazard ratio of left ventricular hypertrophy (LVH) groups defined by left ventricular mass index by body surface area or height to the 2.7 power for adverse clinical outcomes. LVH, left ventricular hypertrophy; BSA, body surface area; H2.7, height to the 2.7 power; CV, cardiovascular; Ref, reference; HR, hazard ratio; CI, confidence interval. HR and its CI were analyzed using multivariate Cox proportional hazard regression analysis entering into age, sex, high-sensitivity C-reactive protein, alcohol drinking, smoking status, causes of chronic kidney disease, albumin, grouped estimated glomerular filtration rate, bilirubin, and hemoglobin by the median, and urine protein-to-creatinine ratio as covariates.

Nephrology consultation after acute kidney injury can improve patients' in-hospital survival.

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**Background/Aims:** The significance of nephrology consultation in patients with acute kidney injury (AKI) is not well established. **Methods:** We enrolled a total of 20,914 patients who were admitted to the Seoul National University Bundang Hospital from January 1, 2013 to December 31, 2013. All clinical and laboratory data were retrieved retrospectively from the electronic medical record database. **Results:** In total, 2,603 (12.4%) patients had AKI during admission (8.7% AKI stage 1, 2.1% AKI stage 2, 1.6% AKI stage 3). Among the 2603 patients with AKI, 446 (17.1%) patients were referred to nephrologists for consultation. Patients who were referred to nephrologists showed characteristics of older age (68.7 ± 14.6 vs. 66.3 ± 15.7 years old, P=0.0002), male preponderance (60.8% vs. 55.6%, P=0.045), more surgical operation (39.7% vs. 29.6%, P<0.001), more ICU care (51.8% vs 24.1%, P<0.001), increased baseline creatinine level (1.51 ± 1.58 vs. 1.05 ± 1.28, P<0.001), high comorbidity score (0.89 ± 1.00 vs. 0.67 ± 0.75), and more advanced AKI stage (eg. AKI stage 3, 33.6% vs. 9.0%, P<0.001). Overall, patients who were referred to nephrologists for consultation showed similar survival rate compared with patients who were not consulted to nephrologist (log-rank P=0.223, HR 1.190 (0.899-1.575)). After propensity score matching (1:1, n= 359 in both group), both group showed comparable clinical characteristics, and nephrology consulted patients showed better survival outcomes (log-rank P=0.07, HR 0.614 (0.428-0.881)). The time from AKI to nephrology consultation and time to answer after consultation did not significantly affect patient survival. **Conclusions:** Patients with AKI who were consulted to nephrologists have a better survival prognosis than those who were not. AKI patients should be encouraged to be consulted to nephrologists for appropriate management and improvement of clinical outcomes.



Propensity Score Matched Patients Survival after AKI according to the Nephrology Consultation.