

Differences in biomarkers between severe isolated right and severe isolated left ventricular dysfunction after cardiac surgery.

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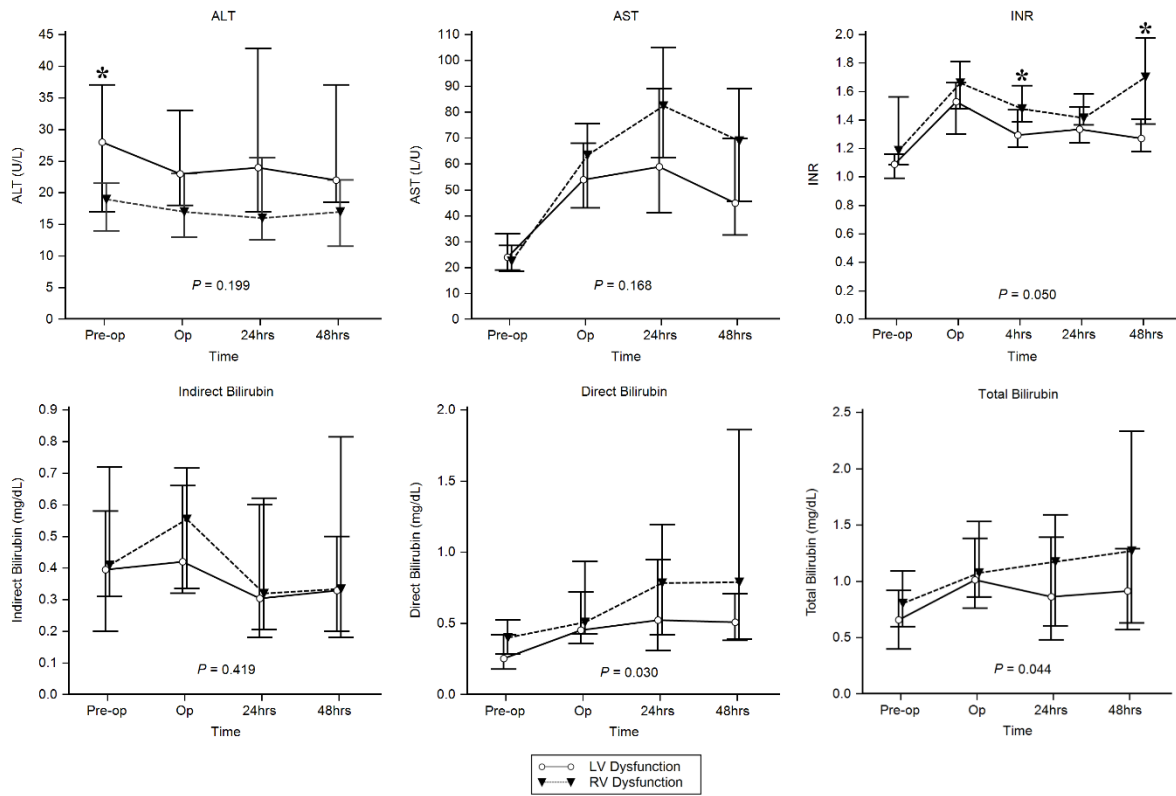
Introduction: The number of cardiac surgery procedures is increasing over the decades and, even though the mortality is decreasing, peri- and post-operative cardiac dysfunction still occur. There are two different kinds of cardiac dysfunction, right ventricular(RV) and left ventricular(LV) dysfunction. In this observational study, we aimed to find out if there are any differences in biomarkers between severe isolated RV dysfunction and severe isolated LV after cardiac surgeries using cardiopulmonary bypass (CPB).

Methods: We screened severe isolated RV dysfunction (n=20) and severe isolated LV dysfunction (n=26)patients. We collected the following parameters before and 4, 24, 48 hours after surgery: Troponin T, alanine transferase (ALT), aspartate transferase, total bilirubin, direct bilirubin, indirect bilirubin, creatine phosphokinase, glucose, creatinine, international normalized ratio (INR), prothrombin time (PT), activated partial thromboplastin time, platelet count, and hematocrit.

Results: Severe isolated RV dysfunction patients had elevated postoperative INR ($P = 0.050$), direct bilirubin ($P = 0.030$), and total bilirubin ($P = 0.044$) by repeated measure analysis of variance. Severe isolated RV dysfunction group also showed lower pre-op ALT (19.3 ± 1.5 vs 32.7 ± 4.2 , $P = 0.001$), higher 4h INR (1.5 ± 0.1 vs 1.4 ± 0.0 , $P = 0.008$) and higher 48hr INR (1.8 ± 0.1 vs 1.4 ± 0.1 , $P = 0.003$). Troponin T ($P = 0.8$), CPK ($P = 0.6$), creatinine ($P = 0.2$), platelet count ($P = 0.2$) and hematocrit ($P = 0.2$) were similar between groups, whereas glucose ($P = 0.011$) was higher in RV dysfunction group.

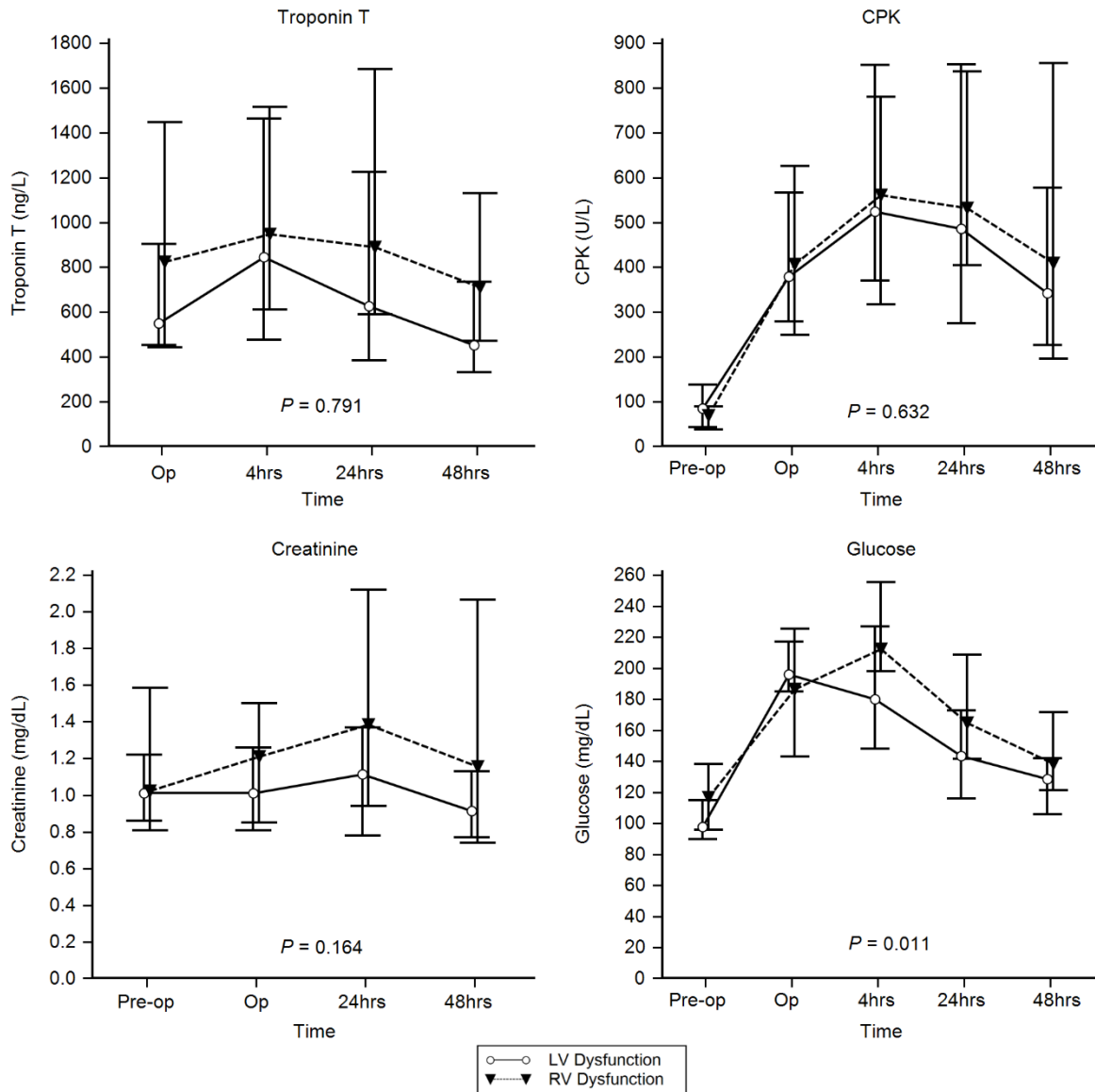
Conclusion: We observed liver biomarkers differences between severe isolated RV dysfunction and severe isolated RV dysfunction.

Figure 1. Changes of liver-related biomarkers measured at time points.



Values are expressed in median and 25-75 percentiles. P values are for repeated measures analysis of variance. *, a significant difference by T-test after adjusted by multiple comparisons at each time point. ALT; alanine transferase, AST; aspartate transferase, INR; international normalized ratio, LV; left ventricular, RV; right ventricular

Figure 2. Changes of cardiac and other biomarkers measured at time points.



Values are expressed in median and 25-75 percentiles. P values are for repeated measures analysis of variance. Troponin T was only measured during and after the operation. *, a significant difference by T-test after adjusted by multiple comparisons at each time point. CPK; creatine phosphokinase, LV; left ventricular, RV; right ventricular