

中文題目：血液透析前後心電心音參數的研究

英文題目：Investigation of Acoustic Cardiography Parameters Before and After Hemodialysis

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Background: End-stage renal disease (ESRD) is a major healthcare problem worldwide, and cardiovascular (CV) disease is a major cause of mortality in this population. Acoustic cardiography is a new technique which synchronizes cardiac auscultation with electric information to detect and characterize heart sound. Acoustic cardiography is an useful tool to identify heart failure earlier. The aim of this study is to investigate parameters of acoustic cardiography in the hemodialysis (HD) population.

Materials and Methods: This study enrolled 162 maintenance HD patients between October 2016 and April 2018. Demographic, medical, and laboratory data were collected. Acoustic cardiography was performed before and after HD to assess the parameters including S3, S4, SDI, EMAT and LVST.

Results: The mean age was 60.4 ± 10.9 years, and 86 (53.1%) patients were men. The dialysis vintage was 8.2 (25th–75th percentile range, 3.9–13.8) years. The mean albumin was 3.9 ± 0.3 g/dL, the mean PEP/ET was 0.3 ± 0.1 and the mean ankle-brachial index (ABI) was 0.95 ± 0.20 . Before hemodialysis the mean S3 was 2.8 ± 1.3 , the mean S4 was 4.9 ± 2.0 , the mean SDI was 3.7 ± 1.6 , the mean EMAT was 90.9 ± 15.7 ms and the mean LVST was 331.8 ± 37.5 ms. Multivariate linear regression analysis showed the EMAT/LVST before hemodialysis was negatively associated with serum albumin level ($\beta = -0.076$; 95% confidence interval (CI) = -0.129, -0.024; $p = 0.004$) and ABI ($\beta = -0.115$; 95% CI = -0.204, -0.026; $p = 0.003$). The EMAT/LVST before hemodialysis was positively associated with PEP/ET ($\beta = 0.278$; 95% CI = 0.100 - 0.456; $p = 0.001$).

Conclusions: The EMAT/LVST before hemodialysis may be positively associated with PEP/ET in ESRD patients and EMAT/LVST and PEP/ET were related to left ventricle function. Besides, lower albumin and ABI level may increase the EMAT/LVST.

Key words: Acoustic Cardiography Parameters, ESRD, Before and After Hemodialysis