

Evaluation of left atrial function in uremic patients by speckle tracing imaging

Fu-Yong Ye¹, Yuwen Yang¹, Xiaofang Li², Fei Lin², Yin-Ting Liang², and Jianhua Liu³

¹Jinan University First Affiliated Hospital

²Gaozhou People's Hospital, Gaozhou, Guangdong

³Guangzhou First People's Hospital, School of Medicine, South China University of Technology

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Abstract

Objective: This study aimed to explore the value of speckle tracing imaging (STI) for assessment of left atrial (LA) function in uremic patients. **Methods.** One hundred uremic patients were divided into four groups according to the New York Heart Association (NYHA) criteria. Thirty healthy participants were enrolled as a control group. LA functional parameters were determined using conventional echocardiography. The strain rate (SR) curve of LA wall was prepared using STI, and SR in different phases of cardiac cycle were obtained. **+Results.** The LA maximal volume (LAVmax) increased and LA passive ejection fraction (LAPEF) decreased. The LA active ejection fraction (LAAEF) showed an initial increase followed by a decrease (all $p < 0.05$). The SR of LA lateral wall and interatrial septum (IAS) in systole (SRs-LA, SRs-IAS) and early diastole (SRe-LA, SRe-IAS) showed a steady decrease; the SR of LA lateral and IAS in late diastole (SRa-LA, SRa-IAS) showed an initial increase followed by a decrease. Compared with control group, the SRs-LA and SRs-IAS decreased in four groups with uremia (all $p < 0.05$). A positive correlation was observed between LAPEF and the absolute value of mean peak early diastolic SR ($|mSR_e|$) ($r = 0.862$, $p < 0.05$), and between LAAEF and the absolute value of mean peak late diastolic SR ($|mSR_a|$) ($r = 0.756$, $p < 0.05$). LAVmax showed a negative correlation with mean peak systolic SR (mSRs) ($r = -0.878$, $p < 0.05$). **Conclusion.** There was a significant correlation between LA function and LA strain rate in uremic patients. STI can allow for an objective and accurate evaluation of LA function in uremic patients.

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