CONCLUSIONS:
Our study demonstrated significant changes in HRV after HD in our diabetic patients, regardless of age. Moreover, coronary artery disease, cerebrovascular disease, systolic and diastolic blood pressures, fasting glucose, and ultrafiltration rate were associated with changes in HRV after HD.

INTRODUCTION AND AIMS: Heart rate variability (HRV) represents changes in the time between successive heart beats, and it has been used to assess the autonomic nervous system. Previous studies have reported autonomic dysfunction in diabetic patients undergoing hemodialysis (HD), however no studies have evaluated the effects of age on changes in HRV in these patients. The aim of this study was to examine the effects of age on changes in HRV in diabetic HD patients.

METHODS: We enrolled 84 diabetic patients receiving maintenance HD. HRV was measured before and after HD to assess changes in HRV (ΔHRV). The patients were divided into two groups based on their age (< 65 years).

RESULTS: Compared to the patients aged < 65 years, those aged ≥ 65 years had a lower high frequency (HF) (% (p = 0.023). The patients aged < 65 years had a significant increase in low frequency (LF) after HD (p = 0.019). The patients aged ≥ 65 years had significant increases in LF (% (p = 0.008) and LH/HF ratio (p = 0.003), but a significant decrease in HF% (p < 0.001) after HD. After multivariate adjustments for demographic, clinical and biochemical data and medications, high diastolic blood pressure and high ultrafiltration rate were independently associated with an increased ALF in the patients aged < 65 years. In addition, in the patients aged ≥ 65 years, coronary artery disease, cerebrovascular disease, systolic blood pressure, fasting glucose and ultrafiltration rate were associated with ΔHRV.

CONCLUSIONS: Our study demonstrated significant changes in HRV after HD in our diabetic patients.

ASSOCIATION BETWEEN AGE AND CHANGES IN HEART RATE VARIABILITY AFTER HEMODIALYSIS IN PATIENTS WITH DIABETES

Hung-Chun Chen²,³, Sau-Chia Chen⁴,⁵, Jun-Chi Huang⁶,⁷

¹Faculty of Medicine, College of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan, ²Faculty of Medical Care, College of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan, ³Division of Nephrology, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan, ⁴Division of Nephrology, Department of Internal Medicine, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan and ⁵Department of Internal Medicine, Kaohsiung Municipal Hsiao-Kang Hospital, Kaohsiung, Taiwan