

中文題目：探討中風與心率變異度在血液透析病患的關聯

英文題目：**The relationship between stroke and heart rate variability in hemodialysis patients**

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Background: Stroke is highly prevalent in maintenance hemodialysis patients and is associated with a worse prognosis. Decreased heart rate variability (HRV) is predictive of poor outcomes in hemodialysis patients. The relationship between stroke and the effects of hemodialysis on changes in HRV remains unclear.

Materials and Methods: This study enrolled 182 patients receiving routine hemodialysis, including 30 patients verified with stroke. Pre-dialytic and post-dialytic HRV measurements were performed to assess the effects of hemodialysis on changes in HRV. The changes in HRV measurements (Δ HRV) were defined as post-dialytic HRV values minus pre-dialytic HRV values.

Results: Compared to patients without stroke, all HRV parameters were lower in stroke patients, but these differences were not significant. In patients without stroke, post-dialytic very low frequency (VLF) ($P < 0.001$), low frequency (LF) ($P = 0.001$), total power (TP) ($P < 0.001$) and LF/high frequency (HF) ratio ($P < 0.001$) increased significantly, whereas post-dialytic HRV was not increased in stroke patients. In patients without stroke, dialysis vintage was positively associated with Δ VLF ($\beta = 0.834$, $P = 0.038$), Δ LF ($\beta = 1.439$, $P = 0.001$), and Δ TP ($\beta = 1.183$, $P = 0.003$). Age ($\beta = -0.018$, $P = 0.029$), and current smoker ($\beta = -0.929$, $P = 0.049$) were negatively associated with Δ LF/HF ratio, whereas serum total cholesterol ($\beta = 0.007$, $P = 0.002$) was positively associated with Δ LF/HF ratio.

Conclusions: Increased HRV after hemodialysis was demonstrated in patients without stroke, but was not observed in patients with stroke. It suggested that hemodialysis failed to modulate the autonomic dysfunction in stroke patients. A longer dialysis vintage and high total cholesterol levels were associated with increased HRV, whereas an older age and smoking were associated with a lesser degree of HRV increase after hemodialysis in patients without stroke.