

The relationship between pulse pressure with plasma PCSK 9 and interleukin-6 among patients with acute ischemic stroke and dyslipidemia

Chen-Shu Chang¹, Chen-Ling Kuo¹, Ching-Shan Huang¹, Yu-Shan Cheng¹, Song-Shei Lin², and Chin-San Liu¹

¹Changhua Christian Hospital

²Central Taiwan University of Science and Technology

April 16, 2024

Abstract

Background and purpose: A high plasma concentration of proprotein convertase subtilisin/kexin type 9 (PCSK9) is characteristic of a prothrombotic state in cardiovascular diseases (CVD). Elevated inflammatory markers, such as interleukin-6 (IL-6), are associated with worse outcomes after ischemic stroke. We aimed to study the role of plasma PCSK9 and IL-6 in acute ischemic stroke with dyslipidemia. **Methods:** We divided 123 enrolled patients with first-ever acute ischemic stroke into normotensive and high blood pressure (BP) groups and further into high and low pulse pressure (PP) subgroups. Clinical characteristics and inflammatory and metabolic parameters, including plasma PCSK9 and IL-6, were recorded. **Results:** After the analysis of the normotensive and BP groups, there were positive correlations between PP and carotid stenosis ($P = 0.031$) and plaque numbers ($P = 0.013$) and between National Institute of Health Stroke Scale (NIHSS) scores ($P = 0.019$) and carotid stenosis severity ($P = 0.021$) and resistance index (RI) ($P = 0.04$). There was a significant association between plasma cholesterol and PCSK9 ($P = 0.044$) in the low PP subgroup and IL-6 ($P = 0.042$) in the high PP subgroup. **Conclusions:** Our findings indicated that plasma PCSK9 levels were associated with the low PP subgroup, while IL-6 was associated with the high PP subgroup. Dyslipidemia control is also necessary for those who had a stroke and who have high PP. Further investigation to assess the role of PCSK9 and IL-6 in patients with stroke is required for early treatment and secondary prevention.

Hosted file

20220124 Main.doc available at <https://authorea.com/users/740340/articles/713315-the-relationship-between-pulse-pressure-with-plasma-pcsk-9-and-interleukin-6-among-patients-with-acute-ischemic-stroke-and-dyslipidemia>