



Baroreflex and Cerebral Autoregulation Are Inversely Correlated

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Résumé en anglais

Background: The relative stability of cerebral blood flow is maintained by the baroreflex and cerebral autoregulation (CA). We assessed the relationship between baroreflex sensitivity (BRS) and CA in patients with atherosclerotic carotid stenosis or occlusion. Methods and Results: Patients referred for assessment of atherosclerotic unilateral >50% carotid stenosis or occlusion were included. Ten healthy volunteers served as a reference group. BRS was measured using the sequence method. CA was quantified by the correlation coefficient (Mx) between slow oscillations in mean arterial blood pressure and mean cerebral blood flow velocities from transcranial Doppler. Forty-five patients (M/F: 36/9), with a median age of 68 years (IQR:17) were included. Thirty-four patients had carotid stenosis, and 11 patients had carotid occlusion (asymptomatic: 31 patients; symptomatic: 14 patients). The median degree of carotid steno-occlusive disease was 90% (IQR:18). Both CA (P=0.02) and BRS (P<0.001) were impaired in patients as compared with healthy volunteers. CA and BRS were inversely and strongly correlated with each other in patients ($\rho=0.58$, P<0.001) and in healthy volunteers ($\rho=0.939$; P<0.001). Increasing BRS remained strongly associated with impaired CA on multivariate analysis (P=0.004). Conclusions: There was an inverse correlation between CA and BRS in healthy volunteers and in patients with carotid stenosis or occlusion. This might be due to a relative increase in sympathetic drive associated with weak baroreflex enhancing cerebral vasomotor tone and CA.

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