META-ANALYSIS: THE EFFECT OF HIGH BLOOD PRESSURE ON STROKE

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ABSTRACT

Background: Blood pressure (BP) is elevated in 75% or more of patients with acute stroke and is associated with poor outcomes. Whether to modulate BP in acute stroke has long been debated. With the loss of normal cerebral autoregulation, theoretical concerns are twofold: high BP can lead to cerebral oedema, haematoma expansion or haemorrhagic transformation; and low BP can lead to increased cerebral infarction or perihematoma ischaemia. This study aimed to explore the effect of high blood pressure on stroke.

Subjects and Method: A systematic review was conducted using the PubMed, Science Direct, Google Scholar, Springerlink databases and the following search criteria: ("Hypertension" OR "High Blood Pressure") AND ("Stroke"). The inclusion criteria were full-text, observational study, published from 2012 to 2020, and reported adjusted Odds Ratio (aOR). The systematic review was carried out according to the PRISMA guidelines. Data analyses were performed using RevMan 5.3.

Results: A total of 7 articles from America, Brazil, China, Indonesia, and India were eligible for quantitative meta-analysis. A meta-analysis involved 2 case control studies showed that hypertensive patients had higher risk on stroke 1.5 times than normotensive patients (aOR= 1.50; 95% CI= 0.69 to 3.27; p= 0.31). A meta-analysis involved 5 cross-sectional studies showed that hypertensive patients had higher risk on stroke 3.30 times than normotensive patients (aOR= 3.30; 95% CI= 2.49 to 4.38; p<0.001).

Conclusion: Hypertension increases the risk of stroke.

Keywords: hypertension, stroke

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