

The effect of aspirin on blood pressure in untreated hypertensive patients and antihypertensive patients: a meta-analysis

Yao Wang¹, yi sun², Hui Liu¹, Qiufeng Lao¹, Shengle Li¹, Yumeng Li¹, Haiying Li¹, Siyao Chang¹, Francis L Martin³, Zhiyong Zhang¹, and Weiyi Pang¹

¹Guilin Medical University

²Affiliation not available

³University of Central Lancashire

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Abstract

Aspirin is essential in the primary and secondary prevention of hypertension. However, the effect of aspirin on blood pressure (bp) in hypertensive patients has been controversial. Therefore, we quantitatively evaluated the effect of aspirin on the bp in untreated hypertensive patients and antihypertensive patients. We searched the PubMed, Embase and Cochrane library electronic databases for articles published prior to June 2019. The overall effect of aspirin on changes in systolic and diastolic bp was estimated by using random-effects models according to the I2 statistic. A total of 15 randomized controlled trials (including 27 studies) met the criteria and were included in the review. For untreated patients with mild hypertension, taking aspirin significantly reduced systolic bp by 1.83 mm Hg (95% CI: -3.15~-0.5, P =0.007) and diastolic bp by 1.32 mm Hg (95% CI: -2.82~0.19, P =0.09). Other subgroup analyses suggest different effects on bp with different aspirin doses, duration and time of administration. Compared with taking aspirin in the morning, taking aspirin before bedtime significantly reduced systolic bp by 2.97 mm Hg (95% CI: -3.78~-2.17, P <0.00001) and decreased diastolic bp by 2.16 mm Hg (95% CI: -2.87~-1.44, P <0.00001). However, for patients on antihypertensive therapy, taking aspirin has no significant effect on bp and did not interfere with the antihypertensive drug treatment. Overall, for untreated hypertensive patients, aspirin can reduce bp, and may have a time-dependent effect. However, aspirin was not found to have an effect on bp in antihypertensive patients.

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