

Does the use of IV blood pressure medications to treat inpatient hypertension reduce the incidence of MI, stroke, or death?

Stephen Whitfield, MD

PGY 3 Resident, McGaw Family Medicine at Humboldt Park

Background: IV blood pressure medications are commonly used in the inpatient setting. However, outside of a few specific indications, there are no guidelines for this practice. It is not known whether these medications improve outcomes for patients, or if so, at what threshold of hypertension they should be initiated.

Methods: A literature search was performed following the protocol of the FPIN HDA program. Included studies examined nonpregnant adults who were admitted to hospitals and who did not have conditions for which blood pressure control is clearly indicated in guidelines (such as heart attack, stroke, hypertensive emergency, or aortic dissection).

Results: There are no systematic reviews or RCTs supporting the use of IV blood pressure medications to treat hypertension without end-organ damage for adults in the inpatient setting. A 2020 retrospective review (n=22,834) found that when patients received IV blood pressure treatments during their admission, they had a higher 30-day incidence of AKI (10.3% vs 7.8%, $p<0.001$) and MI (1.2% vs 0.6%, $p=0.003$), with no change in blood pressure control, stroke incidence, or mortality during one year of follow-up. Higher blood pressures were more likely to be treated, but there was no threshold of starting hypertension at which treated patients fared better than untreated ones.

Conclusions: The use of IV antihypertensives to treat inpatient hypertension without end-organ damage appears to be associated with increased rates of MI and AKI without any impact on stroke or death.