



## *The Medical* **Bulletin**

# In Hypertension

### **Diastolic BP in Patients with CAD: How Low Is Too Low?**

Joel M. Gore, MD, reviewing Messerli FH et al. *Ann Intern Med* 2006 Jun 20 Baseline diastolic BP had a J-shaped relation with risks for death and MI among CAD patients treated with antihypertensive drugs in the INVEST trial. Can very low diastolic blood pressure (DBP) put a hypertensive patient with coronary artery disease at risk for adverse events? Researchers addressed this question by conducting a secondary analysis of the industry-funded INVEST trial, in which 22,576 hypertensive patients with CAD (mean age, 66) were randomized to either a calcium-antagonist-based or a non-calcium-antagonist-based antihypertensive strategy (*Journal Watch Cardiology* Feb 6 2004. [opens in new tab](#)). Median follow-up was 2.7 years. Lower baseline DBP was associated with older age, female sex, white race, and a greater likelihood of having cancer, heart failure, diabetes, or prior MI.

Baseline systolic and diastolic BP each had a J-shaped relation with incidence of the primary combined endpoint (all-cause death, nonfatal stroke, or nonfatal MI), with a risk nadir at 119/84 mm Hg. Risks associated with low DBP and low SBP were parallel, but the low-DBP-related risk was greater. In a multivariable analysis, the risk for any MI during follow-up was about 3.5% for a baseline DBP of 70 to 90 mm Hg and about 13.0% for a DBP  $\leq$ 60 mm Hg (a significant difference). All-cause mortality risk also showed this relation with low DBP, but the risk for any stroke did not. The all-cause mortality and MI risks associated with low DBP were not as high among subjects who had undergone revascularization before enrollment. COMMENT In this secondary analysis of hypertensive CAD patients in the INVEST trial, low diastolic BP was associated with significantly elevated risks for all-cause death and MI, but not stroke. As the authors note, given the MI/stroke disjuncture and the fact that risks associated with low SBP paralleled those associated with low DBP, pulse pressure is not a likely sole explanation. Maintaining a reasonable, mid-range DBP should be a priority in patients with known CAD who are being treated for hypertension. We don't yet know precisely how low is too low, but in this study significant risk for adverse outcomes was associated with DBP  $\leq$ 70 mm Hg.

***Dr. V. Balachandran***  
***MD, MNAMS, FRCP, FACC***