

CONCEPTS IN HYPERTENSION

A Journal Article-Based Approach to Understanding the Clinical Aspects of Hypertension

Volume 3 Issue 9

September 2018

Article of Interest

Neaton J et al. Serum Cholesterol, Blood Pressure, Cigarette Smoking, and Death From Coronary Heart Disease. Archives of Internal Medicine. 1992. ([Click to Access](#))

Context and Study Objective

The emphasis on diagnosing and treating hypertension according to systolic values is a recent development. Until the 1990's, guideline statements and trials were directed at ensuring control of diastolic and mean arterial pressures. In this publication, Neaton sought to establish whether systolic or diastolic blood pressure (BP) was the best predictor of coronary artery disease, and by extension, which should be the primary focus of treatment.

Design, Setting, and Participants

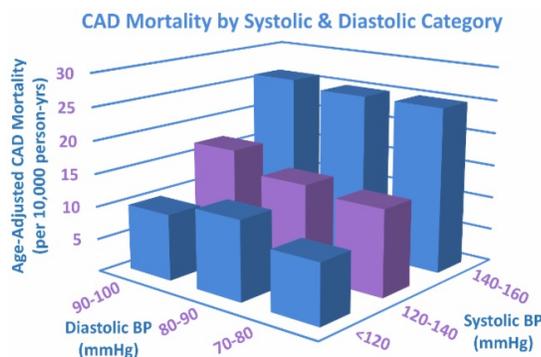
Through a retrospective analysis of the 315,000 American men screened for inclusion in the MRFIT trial, the relationship between BP at screening and death from coronary artery disease (CAD) twelve years later was computed. Screening occurred between 1973-1975 with BP measurements taken in a standardized fashion. Only white men aged 35-57 were eligible; individuals with a previous myocardial infarction or prescribed diabetic agents were excluded. Use of antihypertensives was not an exclusion criteria.

Results

-Study characteristics: Average age of those screened: 46. Mean BP: 130/84 mm Hg. The rate of antihypertensive treatment was not recorded (likely <5%). No further information was provided.

-The strength of the association between BP and CAD mortality was greater for systolic than diastolic hypertension.

-Figure: For a given diastolic BP, progressively higher systolic readings were linked to increasing rates of death. Conversely, at a specific systolic pressure, there was no relationship between worsening diastolic hypertension and heightened CAD mortality.



Clinical Perspective

-While the specialty debates whether 120 or 140 mm Hg is the appropriate treatment target, the emphasis on a *systolic* goal remains unchallenged. However, the inaugural national guidelines - [JNC 1 in 1977](#) - established diagnostic and treatment thresholds according to diastolic pressures. It was not until the 1993 position statement - [JNC V](#) - that systolic values figured prominently. This paper by Neaton was among those that prompted this transition.

-While the study population consisted entirely of caucasian men under age 60, these findings have been reproduced in women, minorities, and the elderly and for outcomes such as all-cause mortality and stroke.

-The "vintage" of this paper should not be viewed as a shortcoming. Through the examination of a cohort recruited in the 1970s, the authors captured a population free of anti-hypertensive, lipid-lowering, and glucose-controlling therapies. This allowed the natural history of cardiovascular disease to reveal itself.

-While the predictive value of models incorporating multiple parameters (systole, diastole, and pulse pressure) are more robust still, the BP generated during systole remains the single most prognostic variable.

-Disclosures: I have no conflicts to declare.

Subscribe | About | Archives
www.ConceptsInHypertension.org
Creator & Author: Hillel Sternlicht, MD
© 2018 Concepts in Hypertension LLC