CONCEPTS IN HYPERTENSION

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

Volume 2 Issue 6 June 2017

Click here for a PDF Version

Article of Interest

Dickerson, et al. Optimisation of antihypertensive treatment by crossover rotation of four major classes. Lancet. 1999. (Click to Access)

Context and Study Objective

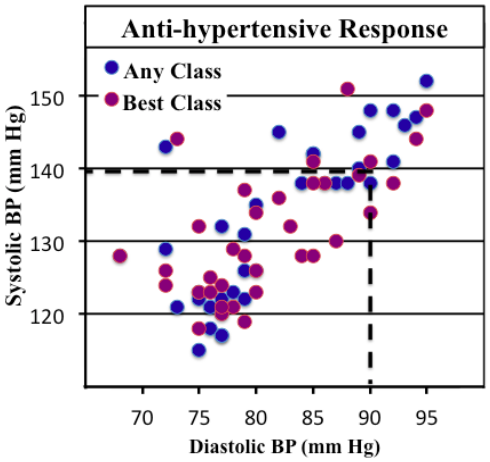
While use of any of the major classes of anti-hypertensives results in comparable declines in BP at the population level, individual responses vary significantly from class to class. By administering an ACEi, CCB, β-blocker, and diuretic to each participant in series, Dickerson assessed the degree of anti-hypertensive response by class.

Design, Setting, and Participants

In an open label fashion, patient received lisinopril 20 mg, bisoprolol 5 mg, hctz 25 mg-triamterene 50mg, or nifedipine XL 30mg daily for 1 month followed by a 1 month washout period. BP response was assessed at the end of each month. Agent dose was selected to ensure approximate equipotent effect. The entry criteria was an untreated BP ≥ 140/90 mm Hg; comorbids such as CKD or CV disease were not mentioned. No specific recommendations regarding diet or lifestyle were made.

Results

-36 of the 56 participants completed the protocol. All participants were Caucasian; 1/3 were women. The mean office entry BP was 161/98 mm Hg.
-In aggregate, the magnitude of BP reduction (16/10 mm Hg) among all individuals was similar after exposure to to each class.
-With respect to a given patient's response by anti-hypertensive class, differences in agent efficacy often varied by 50% or more.
-Figure and table: As a result, BP control (<140/90 mm Hg) was achieved nearly twice as often with a particular anti-hypertensive ("best class") compared to the remaining classes ("any class").
-Shortcomings: The studied suffered from an open label design, a small and homogeneous population, and a lack of clear randomization.



Percent Achieving BP < 140/90 mm Hg	
Any Class	"Best" Class
39%	73%

Clinical Perspective

-Clinical trials evaluating various classes of anti-hypertensives routinely find comparable BP reductions across agent groups leading to the belief that medication classes are interchangeable. However, as this paper illustrates, an individual's response to various classes often differs dramatically, a finding masked by "average" BP response among a group of patients.
-Identifying the optimal medication class can be achieved by tailoring therapy to a patient's age, ethnicity, volume status, and renin level (all future newsletter topics). In general, younger individuals (<50 years old) are most sensitive to ACEi/ARBs or β-blockers. The elderly, the obese, and those with volume overload require diuretics. In contrast, all individuals (irrespective of age or ethnicity) respond to CCBs.

Creator & Author: Hillel Sternlicht, MD
© 2017 Concepts in Hypertension