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CARDIOVASCULAR MEDICINE AND SOCIETY

Controlling Hypertension

Our Cardiology Practices Can Do a Better Job



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Although the world's attention is riveted on the coronavirus disease-2019 (COVID-19) pandemic, it is essential to keep sight of other highly dangerous conditions which have not abated during these times. The global burden of cardiovascular diseases qualifies as such a concern, and hypertension is paramount (1). Additionally, while uncontrolled hypertension, per se, has not been confirmed as an independent predictor of severe complications or death from COVID-19, it does result in heart and kidney disease and stroke, largely preventable conditions that increase vulnerability to health threats, including COVID-19 (2).

Recently, the U.S. Surgeon General issued a Call to Action to Control Hypertension (3). Published in October 2020 and followed by a re-enforcing clarion in November (4), the proposal reminds us of 3 facts: 1) nearly one-half of U.S. adults have hypertension; 2) the rate of control (<140/<90 mm Hg), measured in the 2017 to 2018 National Health and Nutrition Examination Survey (NHANES), is 43.7%; and 3) the rate of control is declining from 53.8% in 2013 to 2014 (5). The Call to Action has 3 goals (G-1 to G-3) and 10 recommended strategies (S-A to S-D within each Goal):

GOAL 1: MAKE HYPERTENSION CONTROL A NATIONAL PRIORITY

STRATEGY A. Increase awareness of the health risk of uncontrolled hypertension.

STRATEGY B. Recognize the substantial economic costs of uncontrolled hypertension.

STRATEGY C. Eliminate disparities in the treatment and control of hypertension.

GOAL 2: ENSURE THAT THE PLACES WHERE PEOPLE LIVE, LEARN, WORK, AND PLAY SUPPORT HYPERTENSION CONTROL

STRATEGY A. Promote access to and availability of physical activity opportunities within communities.

STRATEGY B. Promote access to and availability of healthy food options within communities.

STRATEGY C. Promote links between clinical services and community programs.

GOAL 3: OPTIMIZE PATIENT CARE FOR HYPERTENSION CONTROL

STRATEGY A. Advance the use of standardized treatment approaches and guideline-recommended care.

STRATEGY B. Promote the use of health care teams to manage hypertension.

STRATEGY C. Empower and equip patients to use self-measured blood pressure monitoring and medication adherence strategies.

STRATEGY D. Recognize and reward clinicians and health systems that excel in hypertension control.

RELEVANCE OF THE CALL TO ACTION TO PRACTICING CARDIOLOGISTS

The entire Call to Action is of interest to practicing cardiologists because of the strong causality between uncontrolled blood pressure and ischemic heart and

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ABBREVIATIONS AND ACRONYMS

COVID-19 = coronavirus disease-2019

NHANES = National Health and Nutrition Examination Survey

PINNACLE = Practice Innovation and Clinical Excellence

peripheral vascular disease, heart failure, stroke, kidney disease, and complications of pregnancy; however, certain of the strategies have particular resonance. Specifically, it is within the ability of all cardiologists to increase the awareness of the health risks of uncontrolled hypertension (G-1, S-A), to identify and rectify health disparities within their practices (G-1, S-C), to follow standard-

ized, guideline-recommended treatment protocols (G-3, S-A), to support the use of health care teams (G-3, S-B), and to encourage self-measured blood pressure monitoring (G-3, S-C).

The Call to Action is also an impetus to ask how we cardiologists are doing in treating hypertension in our patient populations. Data from the Practice Innovation and Clinical Excellence (PINNACLE) registry, the largest outpatient cardiovascular practice data repository in the world (>6,000,000 records and >8,000 clinicians), provide insights that illuminate the answer (6).

Figure 1A compares NHANES data with analogous data from the PINNACLE registry. Perhaps not surprisingly, the percentage of patients in cardiovascular practices (N = 3,550,408 in 2017) with controlled blood pressure is substantially higher than in the population as a whole (72.3% vs. 42.7%). What may be surprising is the observation that the proportion of controlled hypertensive patients in cardiology practices has been essentially steady over time (73.1% in 2013 and 72.3 in 2017; p for trend <0.001.) The mean value over this time is 72.4%. This stagnation is particularly interesting when viewed in comparison to other measures of cardiovascular care reported from the PINNACLE registry.

Figure 1B shows that 4 other (process) measures (beta-blockers in heart failure, angiotensin-converting enzyme inhibitors in heart failure, statins in ischemic heart disease, and oral anticoagulants in atrial fibrillation) improved during the period of observation (all trends $p < 0.001$) whereas blood pressure control (an outcome measure) was flat (7).

POSSIBLE EXPLANATIONS FOR SUBOPTIMAL HYPERTENSION CARE GIVEN BY CARDIOLOGISTS

Compared to population-level data, hypertension control rates provided by cardiologists participating in the PINNACLE registry are more favorable, but in reviewing these trends an additional question arises. Why have blood pressure control rates for

cardiologists' patients stalled in the low 70% range while process measures of their care have improved over time?

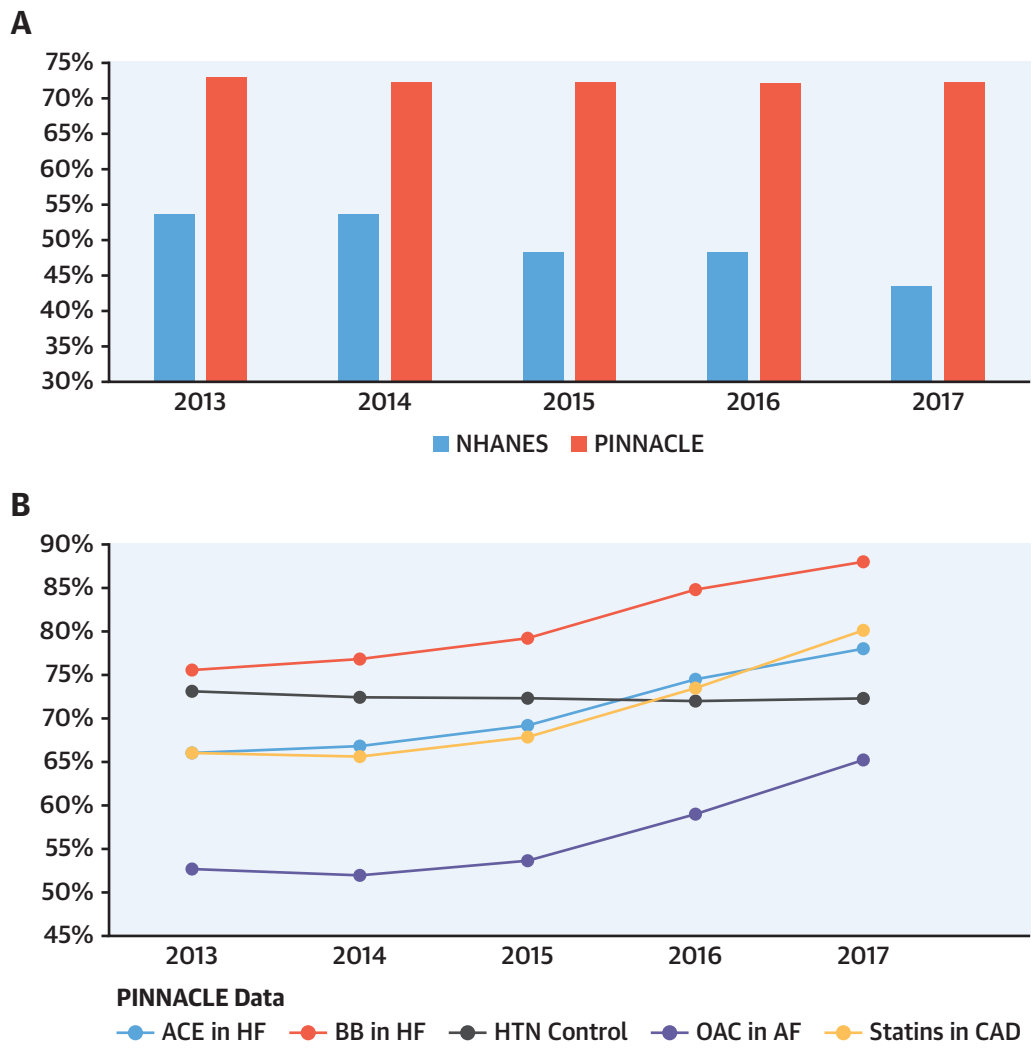
To address this question, it is worth noting that with national initiatives such as Million Hearts 2022, higher levels of success—exceeding 80% hypertension control—have been achieved in multiple health care delivery settings, from private practices to integrated health care systems, to academic groups, and to community health centers, all with patient populations of differing risk profiles (7). A combination of techniques and resources has been helpful in achieving higher blood pressure control rates. These have included electronic health record systems, treatment protocols, integrated health care teams, performance feedback to clinicians, medication intensification and adherence monitoring, and shared management with self-measurement of blood pressure. Experience has shown that many of these measures can be successfully implemented in practices of all sizes and types (7).

Since a higher rate of blood pressure control is achievable at the practice cohort level, it is possible that this is not a priority for some clinical cardiologists; because of this, cardiologists may not have deployed resources to achieve the goal. This is counterintuitive, given all cardiologists' intentions to prevent cardiovascular disease and the well-established evidence that for every 20 mm Hg decrease in systolic pressure or 10 mm Hg decrease in diastolic pressure, the risk of death by heart disease, stroke, or other vascular disease is reduced by one-half (8). If blood pressure control is not a top priority for cardiologists, what may be the reasons?

A possible reason why hypertension control rates for cardiology patients do not appear to be optimal may be that cardiologists consider hypertension a primary care condition. Out of respect for the role of the primary care practitioner and with a keen sensitivity to the possible perception of the specialist's taking over the entire care of the patient, cardiologists may be loath to initiate or adjust hypertension therapy.

A second possible reason why control rates have not improved over time may be that hypertension has been "crowded out" as a focus of therapeutic efforts in at least 3 ways. First, in a population of patients who are commonly older and sicker, other acute and chronic issues, such as hypotension and renal failure, may complicate the clinical picture and make management of hypertension more challenging. Second, in a population of chronically and severely ill patients, other

FIGURE 1 Blood Pressure Control in NHANES and the PINNACLE Registry



(A) Blood pressure control in National Health and Nutrition Examination Survey (NHANES) is <140/<90 mm Hg, and in the Practice Innovation and Clinical Excellence (PINNACLE) registry is <140/90 mm Hg in patients <60 years of age or any patient with diabetes or chronic renal disease and <150/90 mm Hg in patients >60 years of age. **(B)** Cardiovascular therapeutics in the PINNACLE registry. ACE = angiotensin-converting enzyme inhibitor; AF = atrial fibrillation; BB = beta-blocker; CAD = coronary artery disease; HF = heart failure; HTN = hypertension; OAC = oral anticoagulation.

specialists, such as nephrologists, may be assumed to have primary responsibility for hypertension. Third, recent advances in therapeutics have been concentrated in areas other than hypertension. Within the past several years, novel approaches have become available in cholesterol management, anticoagulation therapy, and heart failure, but there have been no new “blockbuster” therapies for hypertension that have dominated clinical attention.

A third potential reason for both cardiology’s stagnant and NHANES-reported falling control rates for hypertension may be uncertainty over what exactly “control” is. Since 2012, no fewer than 6 guidelines for hypertension control, many with differing treatment threshold recommendations, have been published (9,10). Thus, the cacophony of conflicting recommendations, published over a short period and each purporting to be “evidence-based,”

may be a contributing factor to the relatively poor and diminishing level of control seen in serial NHANES reports and the lackluster levels of control in cardiology practices. Muntner et al. (5) have suggested that this may be a contributing factor to the observed decreasing control levels seen in NHANES.

WHAT CAN WE, AS CARDIOLOGISTS, DO IN OUR PRACTICES TO IMPROVE THE CONTROL RATE OF HYPERTENSION IN OUR PATIENTS?

To answer this question, we offer several recommendations:

1. Make a professional commitment and deploy the necessary resources to improve hypertension control in our patients, to identify, record, and, when possible, eliminate health disparities caused by the social determinants of health, and, when possible, to participate in quality improvement research. All cardiologists, irrespective of subspecialty interest or training, should make these commitments.
2. Adopt or recommit to a risk-informed approach to controlling hypertension, understanding that there is an ample evidence base for this strategy (10).
3. Take every opportunity to increase awareness among our patients and staffs of the health risks of uncontrolled hypertension.
4. Use standardized treatment approaches and guideline-recommended care for our patients.
5. When feasible maximize the use of health care teams, ideally with pharmacists, social workers, patient navigators, and administrators, to manage our patients with hypertension and recognize and reward team members for their successes.
6. Empower and equip our patients to use self-measured blood pressure monitoring and proven medication adherence strategies.
7. Provide telehealth opportunities for our patients when clinically appropriate, promoting the frequent contact which enables treatment titration and lifestyle change reinforcement.
8. Communicate specifically and often with our primary care referring physicians to determine what the goals of hypertension therapy are and how we can best work together to help our patients achieve their goal.
9. Remind ourselves that hypertension is a potent and remediable cause of cardiovascular disease and that it deserves as much attention as lipid therapy, tobacco cessation, heart failure treatment, arrhythmia control, and lifestyle modification.
10. Encourage our cardiovascular specialty societies to collaborate with primary care societies to create educational opportunities and strategies for our memberships to work together and respond to the Call to Action. These collaborative efforts should have the full support and commitment of society member leadership as well as society administrative staff. Such efforts have the potential to create new models of collaborative care which could greatly improve the hypertension control and the health of all our patients.

CODA

Contemporary data show that, even with a broad definition of hypertension, cardiology practices averaged 72.4% control over a recent 5-year period. When we were in school, a grade of 72.4% was a D+, and that was never satisfactory. Our cardiology practices can do a better job.

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