Uncontrolled Hypertension or Resistant Hypertension?

Strategies for Improving Management and Control

CME Grand Rounds

PROJECT GOAL

The goal of this program is to improve patient outcomes through greater utilization of management strategies for patients with treated but uncontrolled hypertension. This program will address knowledge, performance and competence gaps and will educate physicians on current strategies to better manage patients with difficult-to-control hypertension.

PROBLEM STATEMENT

It is well established that hypertension is a major, modifiable risk factor for premature cardiovascular disease (CVD), yet CVD is still the most frequent cause of mortality in this country.[1,2] Annual rates of hypertension prevalence among American adults has remained approximately 30% over the past 10 years,[3] which translates to approximately 73 million adults today.[1]

Population studies of American adults, such as the National Health and Nutrition Examination Survey (NHANES) on awareness, treatment and control of hypertension, and analyses of the Framingham Heart Study, have documented an inadequate rate of hypertension control.[4-6] Despite considerable improvements in patient awareness and proportion of patients receiving treatment, approximately half of all adults treated for hypertension are uncontrolled.[4,7] Uncontrolled hypertension conveys an elevated level of cardiovascular risk[8] and risk for end-organ damage.[9]

Among this population of uncontrolled hypertension are patients with resistant hypertension, defined as hypertension uncontrolled to blood pressure goals with an optimized regimen of three or more antihypertensive agents[10], or hypertension that is controlled with four or more agents.[7,11] Yet, with newly enhanced management strategies, control to blood pressure goals may be achieved in a number of these patients.[8] Clearly, there is a need for greater awareness and utilization of these management strategies that may improve hypertension control.

Gap: Findings from cross-sectional and outcome studies suggest resistant hypertension is a not uncommon, if often unmet, clinical challenge.[8,12,13] Recent reports have outlined management strategies for identification of patient-controlled risk factors and underlying comorbidities, and individualized treatment regimens that improve hypertension control.[8,12] This program is designed for physicians who manage patients with hypertension

to augment their knowledge, performance and competence in improving outcomes in uncontrolled hypertension.

STATEMENT OF NEEDS

Physicians need to acquire and utilize the expertise to differentiate resistant hypertension from pseudoresistant hypertension.

Patients with treatment-resistant hypertension require a more comprehensive examination and diagnostic evaluation than patients with responsive hypertension.[13] Newly enhanced management strategies outline the process for avoiding common errors in the identification of patient-controlled risk factors and underlying comorbidities.[14] Primary goals of this thorough assessment are to differentiate true resistant hypertension from pseudoresistant hypertension and to identify underlying secondary causes of hypertension.[12] There are no evidence-based studies to support these newly enhanced management strategies; the strategies are based on observational studies and expert opinion.[15] Proficiency in conducting a thorough and efficient evaluation can be enhanced by learning the management strategies that will be presented in this proposed program.

Physicians need to optimize and individualize treatment strategies for combination regimens that improve management of resistant hypertension.

Many studies have established the benefits of two-drug regimens of different classes of antihypertensive agents, especially if one of the two drugs is a thiazide diuretic.[8] At the same time, several large hypertension outcome trials (ALLHAT, LIFE, INVEST) have demonstrated a failure to achieve blood pressure control in high-risk CVD patients despite the administration of three or more antihypertensive medications.[14, 16-20] Unfortunately, there are few if any evidence-based reports of successful control with combinations of three or more antihypertensive agents; recommendations for treatment regimens that improve control of resistant hypertension are largely empiric and/or anecdotal.[8] This proposed program will present the latest progress of leading experts in controlling treatment-resistant hypertension with three-drug combinations.

TARGET AUDIENCE

- Cardiologists
- Nephrologists
- Diabetologists
- Internists
- Family physicians

LEARNING OBJECTIVES

At the conclusion of this educational program, participants should be able to:

1. Conduct a comprehensive patient evaluation that identifies patient-controlled and lifestyle factors, and underlying comorbidities that contribute to uncontrolled hypertension, to differentiate uncontrolled hypertension from resistant hypertension.
2. Optimize and individualize treatment strategies for combination regimens that improve management of resistant hypertension.

GAP ANALYSIS

Gap	Type of Gap	Need That Will Address Gap	Learning Objective(s) That Will Address Gap and Need	Results That Will be Measured	Method That Will be Used
Approximately half of all adults treated for hypertension remain uncontrolled[4-6] Sources: NHANES, Framingham surveys; literature review	Knowledge, Performance, Competence	Physicians need to acquire and utilize the expertise to differentiate resistant hypertension from pseudo-resistant hypertension	Conduct a comprehensive patient evaluation that identifies patient-controlled and lifestyle factors, and underlying comorbidities that contribute to uncontrolled hypertension, to differentiate uncontrolled hypertension from resistant hypertension	1) Responses to vignette questions regarding evaluation of difficult-to-treat hypertensives 2) Plans to change evaluations in their clinical practice	1) Posttest to be completed at end of program 2) Commitment to change assessment to be completed 3 months post-program
		Physicians need to optimize and individualize treatment strategies for combination regimens that improve management of resistant hypertension	Optimize and individualize treatment strategies for combination regimens that improve management of resistant hypertension	1) Responses to vignette questions regarding optimizing and individualizing combination regimens to improve control of resistant hypertension 2) Plans to change treatment strategies in their clinical practice	1) Posttest to be completed at end of program 2) Commitment to change assessment to be completed 3 months post-program

PROPOSED AGENDA

10 minutes — Overview of Difficult-To-Treat Hypertension

- AHA definition of resistant hypertension
- Clinical characteristics of common patients at risk

20 minutes — Differentiate Resistant Hypertension from Pseudoresistant Hypertension

- Principles of a comprehensive evaluation
  - Accurate BP measurement
  - Adherence determination
  - Biochemical tests for inadequate lifestyle behaviors
  - Substances that interfere with control
- Secondary causes
  - Intravascular volume expansion (primary aldosteronism, renovascular hypertension)
  - Obstructive sleep apnea
  - Insulin resistance

20 minutes — Pharmacologic Management

- Combine 3 agents with different mechanisms of action
- Maximize diuretic
  - Long-acting thiazide
  - Loop diuretic for chronic kidney disease
- Individualize regimen to patient clinical profile
  - High CVD risk (diabetes, chronic kidney disease)
  - Heart failure
  - Post-MI (STEMI, UA/NSTEMI)
  - Metabolic syndrome
- Optimize doses
- Enhance adherence

10 minutes — Conclusions and Q&A

Listed below are the names of potential faculty.

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