HYPERTENSION
1 WEBINAR
e NEWSLETTER

Date: May 1, 2019

Topic: Practical considerations in HTN guideline implementation

CME Communications, in association with Cleveland Clinic, presented its first webinar as a part of CME Program on Hypertension (HTN) & End Organ Protection. The present report summarizes key comments from the webinar.

Leslie Cho
MD, Director of the Women's Cardiovascular Center
Cleveland Clinic, USA

The first webinar of the series of webinars on Hypertension (HTN) & End Organ Protection was held on 1st May 2019, with the topic being Practical Considerations in HTN Guideline Implementation. The webinar presentation was made by Dr Leslie Cho, who is the Professor of Medicine at the CCLCM Case Western Medical School, and also holds the position of Director, Women's cardiovascular center, and Section Head, Preventive Cardiology and Cardiac Rehabilitation, Interventional Cardiology.

Dr Cho clearly signified the need and importance to revisit this important topic of hypertension management in view of the updated American and European guidelines on management of hypertension, evaluating key differences and similarities in these guidelines with regards to patients' diagnosis, treatment goals, and management.

The three major issues that Dr Cho addressed through this webinar were:

- When should you label a patient as having hypertension?
- What is the new target blood pressure according to the guidelines?
- What therapy should be used for the treatment of patients identified to have hypertension?

Brought by CME COMMUNICATIONS A PASSI GROUP COMPANY

Educational Support by SANOFI

In association with Cleveland Clinic

Hypertension definitions

Dr Cho highlighted the differences concerning blood pressure (BP) categories defining hypertension as mentioned in the American and European Guidelines (Table 1). According to the "2017 ACC/AHA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults", normal BP is considered when systolic and diastolic blood pressures (SBP and DBP) are <120 and < 80 mmHg, respectively. A SBP of 120-129 mmHg (along with DBP <80) is considered as elevated; whereas a SBP 130-139 mmHg (or DBP 80-89 mmHg) is Stage 1 hypertension, and SBP ≥ 140 mmHg (or DBP ≥ 90 mmHg) is Stage 2 hypertension.

In contrast, the recent 2018 European Guidelines given by ESC/ESH provides a more elaborative categorization of hypertension stages. According to these guidelines, optimal BP is SBP <120 along with DBP < 80 mmHg. SBP 120-129 mmHg and/or DBP 80-84 mmHg signifies normal BP, while a SBP 130-139 mmHg and/or DBP 85-89 mmHg is considered as high normal. Grade 1 hypertension is considered when an individual has a SBP 140-159 mmHg and/or DBP 90-99 mmHg; while Grade 2 hypertension is considered when SBP is 160-179 mmHg and/or DBP is 100-109 mmHg. A SBP ≥ 180 mmHg and/or DBP ≥ 110 mmHg signifies Grade 3 hypertension.

Thus, the take home message was that while normal BP category is same in both the guidelines; ESH 2018 guideline categorize Grade 1 hypertension when SBP 140-159 mmHg and/or DBP 90-99 mmHg, while AHA/ACC 2017 categorize Stage 1 hypertension when SBP 130-139 mmHg or DBP 80-89 mmHg; thus clearly showing that the American guidelines are stricter when categorizing hypertension. For monitoring of BP, ambulatory BP monitoring is considered superior to office BP monitoring.

Table 1: Categories of BP in adults

ESC/ESH 2018			
Category	**Systolic (mmHg)**		**Diastolic (mmHg)**
Optimal	< 120	and	< 80
Normal	120-129	and/or	80-84
High normal	130-139	and/or	85-89
Grade 1 hypertension	140-159	and/or	90-99
Grade 2 hypertension	160-179	and/or	100-109
Grade 3 hypertension	≥ 180	and/or	≥ 110
Isolated systolic hypertension	≥ 140	and	< 90
AHA/ACC 2017			
Category	**Systolic (mmHg)**		**Diastolic (mmHg)**
Normal	<120 mmHg	and	< 80 mmHg
Elevated	120-129	and	< 80 mmHg
Hypertension			
Stage 1	130-139 mmHg	or	80-89 mmHg
Stage 2	≥ 140 mmHg	or	≥ 90 mmHg

Non-pharmacological treatment for hypertension

Once hypertension has been detected in an individual, the first approach in most patients is introduction of the non-pharmacological measures, including diet modification and exercise recommendations. Weight loss is important given the expectation that every 1 kg reduction in body weight reduces BP by about 1 mmHg (Table 2). Similarly, the benefits of dietary salt restriction are well-known. Optimal goal for dietary sodium is <1500 mg/d, but it is recommended that most patients should aim for at least a 1000 mg/d reduction. Concurrently, intake of dietary potassium should be increased, preferably by consumption of a diet rich in potassium, with aim for a goal of 3500–5000 mg/d potassium.

Furthermore, similar to dietary modification, exercise is another important non-pharmacological measure in the treatment of patients identified to have hypertension. Guidelines in this context recommend a 90-150 min/week aerobic exercise in general. Patients diagnosed to have hypertension should also reduce their alcohol intake.

BP goals in patients with hypertension according to clinical conditions

Both the American and European guidelines have given BP goals in patients with hypertension

Table 2: Non-pharmacological dietary treatment for hypertension				
	Intervention	**Dose**	**Approximate Impact on SBP**	
			Hypertension	**Normotension**
Weight loss	Weight/body fat	Best goal is ideal body weight, but aim for at least a 1-kg reduction in body weight for most adults who are overweight. Expect about 1 mmHg for every 1-kg reduction in body weight.	-5 mmHg	-2/3 mmHg
Healthy diet	DASH dietary pattern	Consume a diet rich in fruits, vegetables, whole grains, and low-fat dairy products, with reduced content of saturated and total fat.	-11 mmHg	-3 mmHg
Reduced intake of dietary sodium	Dietary sodium	Optimal goal is <1500 mg/d, but aim for at least a 1000-mg/d reduction in most adults.	-5/6 mmHg	-2/3 mmHg
Enhanced intake of dietary potassium	Dietary potassium	Aim for 3500–5000 mg/d, preferably by consumption of a diet rich in potassium.	-4/5 mmHg	-2 mmHg

according to different clinical conditions. However, there is an interesting observation here, showing SBP/DBP <130 /< 80 mmHg as the goal to be widely remembered.

Recommendations for treatment and follow-up

The guidelines mention that cardiovascular risk factors should be considered while initiating treatment in hypertensive patients. According to the ACC/AHA 2017 guidelines, for initiation of antihypertensive therapy, first line agents include thiazide diuretics, calcium channel blockers (CCBs), and angiotensin converting enzyme (ACE) inhibitors or angiotensin receptor blockers (ARBs). The ESC/ESH 2018 guidelines also mention using a combination of these agents in patients diagnosed to have hypertension.

Dr Cho however mentioned few medication pearls that should be kept in mind when initiating treatment for hypertension. For instance, hydrochlorothiazide (HCTZ) is a weak diuretic, while Losartan is a weak ARB. Better choices for diuretic are chlorthalidone or indapamide. Likewise, better choices for ARB are olmesartan, telmisartan, irbesartan, and candesartan. In younger patients and elderly, CCBs and diuretics are the key.

Furthermore, Dr Cho also addressed important points to be considered in different patient populations, like the salt-sensitive patient, hyperadrenergic patient, obese and renin-angiotensin activated patient, and patient with inappropriately elevated aldosterone. Dr Cho mentioned that in salt-sensitive patients, appropriate reduction of salt intake could in fact bring an effect equivalent to two BP medications. Likewise, hyperadrenergic patients tend to respond to low dose beta-blockade, non-DHP CCBs, central α2-antagonist. Finally, Dr Cho mentioned common side effects like lower extremity edema, cramping and fatigue, which patients with hypertension may experience; and reiterated the message that majority of patients with high BP can be at goal with lifestyle modifications and minimal medications.

Q & A Session

Q1. Can you kindly re-explain the need for reduced cut-off blood pressure values in the recent ACC/AHA guidelines on hypertension? Would it not increase pressure burden and impose more economic challenges for already overburdened healthcare system in developing world?

A. Recently, ACC/AHA guidelines have radically re-defined cut-off BP levels to define hypertension, lowering the thresholds for elevated BP, and stage 1 and 2 hypertension to address the importance of early identification of patients with hypertension, and to avoid missing any such patient who could benefit with an early introduction of anti-hypertensive therapy.

However, these guidelines emphasize early use of non-pharmacological therapy; therefore is unlikely to increase use of anti-hypertensive therapy significantly. Moreover, since early identification and treatment would reduce the incidence of complications, this per se would also reduce burden of its complications and its pertinent management.

Q2. What is treatment goal of antihypertensive therapy in a patient with diabetes and history of stroke?

A. The treatment goal of antihypertensive treatment in both conditions as outlined by ACC/AHA guidelines is <130/80 mmHg.

Q3. What is the rationale for having same BP goals for different types of comorbidities?

A. The recent ACC/AHA guidelines mention <130/80 mmHg as the BP goal in several conditions. Perhaps, this has been provided to avoid the unwarranted complexity in management of hypertensive patients with different comorbidities in real world clinical practice.

Q4. Is nephroprotection a critical factor to consider for hypertensive patients?

A. End-organ protection of all forms is important for optimal management of patients with hypertension. Kidneys are both the genesis of hypertension due to existence of the RAS system, as well as the target organs to be affected in poorly controlled hypertension. Therefore, to maintain optimal control of BP, nephroprotection is critical.

Q5. For patients' follow-up, which BP readings are better or more reliable?

A. While ambulatory BP monitoring is superior and more reliable, home BP monitoring is more pragmatic and easier to use as it dose not require too much training and therefore is operator independent. When home monitoring is being used, it is stressed to use brachial recording in patients more than 50 years as it is more accurate.

Topic for webinar 2

Addressing high-risk hypertension and reducing risk of target-organ damage

Date: 19th June, 2019

Time: 09.00 pm (UAE, Oman), 08.00 pm (Bahrain, Kuwait, Qatar)

Speaker
Dr Philip E. Knapp, MD
Assistant Professor
Boston University School of Medicine
Dept of Medicine
Endocrinology, Diabetes, Nutrition & Weight Management
Boston, MA

Brought by CME COMMUNICATIONS A PASSI GROUP COMPANY

In association with Cleveland Clinic

Educational Support by
SANOFI

For further medical information, please send us email to medical-information.gulf@sanofi.com
For further educational support, please contact us on: engage.gulf@sanofi.com
To report adverse events, please call +971561747001 or email: Gulf.Pharmacovigilance@sanofi.com

SAGUL.OTHE.19.04.0165(1)a