Monroe County Medical Society Community-wide Guidelines

Management of Adult Hypertension

**Purpose**
To identify and promote the essential elements of management of adult hypertension.

**Key Recommendations**
- Treat to blood pressure (BP) target levels:
  - $<140/90$ mm Hg
  - $<130/80$ mm Hg with diabetes, known clinical cardiovascular disease or kidney disease\(^1\)
- Prescribe life style modifications (https://healthmetrics.heart.org/detailed-summary/, page 6, bottom)
- Initial antihypertensive treatment:
  - In general, nonblack population, including those with diabetes, initial antihypertensive treatment should include thiazide diuretics, calcium channel blockers, ACE or ARBs
  - In the general black population, including those with diabetes, initial antihypertensive treatment should include a thiazide-type diuretic (especially chlorthalidone) or CCB.\(^3\)
  - In the population aged $\geq 18$ years with CKD (including all CKD patients with hypertension regardless of race or diabetes status), initial (or add-on) antihypertensive treatment should include an ARB or ACEI to improve kidney outcomes. An ACE inhibitor (or an ARB if ACE inhibitor is not tolerated) is a preferred drug for treatment of hypertension for those with chronic kidney disease stage 3, or for stage 1 or 2 with albuminuria ($300$ mg/d or higher, or $300$ mg/g albumin-to-creatinine ratio or higher or the equivalent in the first morning void). Combining an ARB with a direct renin inhibitor is contraindicated because of a greater risk for hyperkalemia and hypotension and lack of demonstrated benefit. (https://healthmetrics.heart.org/detailed-summary/), page 10, left side column

**High Risk Populations/Disparities**
- In Blacks, hypertension is more common, more severe, develops at an earlier age and leads to more clinical sequelae than in age-matched non-Hispanic Whites. (https://www.ahajournals.org/doi/10.1161/HYPERTENSIONAHA.116.07553)
- In Monroe County, in 2016, 30% of all adults have hypertension (41% of those ages 35 and older). Differences by residence (city/suburbs) and race/ethnicity: City/Suburbs - 50% vs. 39%; Black/White - 64% vs. 39%; Latino/White - 42% vs. 39%.
During 2011–2014, 15.9% of adults aged 18 and over with hypertension were unaware of their hypertension (https://www.cdc.gov/nchs/data/databriefs/db278.pdf):
  - A higher percentage of men (19.2%) than women (12.9%) with hypertension were unaware of their hypertension status.
  - The percentage of adults with hypertension who were unaware of their status decreased with increasing age (30.8% for adults aged 18–39, 17.4% for adults aged 40–59, and 12.5% for adults aged 60 and over).
  - A higher percentage of non-Hispanic Asian (24.7%) and Hispanic (20.2%) adults with hypertension were unaware of their hypertension compared with non-Hispanic white (14.9%) and non-Hispanic black (14.7%) adults with hypertension.
  - In contrast to 2003 JNC-7 guideline, the report of the panel of JNC-8 was never endorsed by NHLBI, AHA, or ACC. At the same time, the NIH indicated that blood pressure guidelines should subsequently be made by professional societies, and the most recent guideline was made in 2017 by the ACC/AHA Foundation through a process similar to other guidelines they construct for cardiovascular health.

Footnotes:
   Guidelines are intended to be flexible. They serve as reference points or recommendations, not rigid criteria. Guidelines should be followed in most cases, but there is an understanding that, depending on the patient, the setting, the circumstances, or other factors, care can and should be tailored to fit individual needs.

Monroe County Medical Society Community-wide Guidelines

Management of Adult Hypertension

Identification and Evaluation

<table>
<thead>
<tr>
<th>Blood Pressure Measurement Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Method</strong></td>
</tr>
<tr>
<td>In-Office</td>
</tr>
<tr>
<td>Ambulatory BP Monitoring</td>
</tr>
<tr>
<td>Patient Self-Check</td>
</tr>
</tbody>
</table>

Footnotes:

Guidelines are intended to be flexible. They serve as reference points or recommendations, not rigid criteria. Guidelines should be followed in most cases, but there is an understanding that, depending on the patient, the setting, the circumstances, or other factors, care can and should be tailored to fit individual needs.

https://healthmetrics.heart.org/detailed-summary (page 5, Masked & White Coat Hypertension)

https://www.acc.org/~/media/Non-Clinical/Files-PDFs-Excel-MS-Word-etc/Guidelines/2017/Guidelines_Made_Simple_2017_HBP.pdf (Page 5, Figure 1)

Causes of Resistant Hypertension
- Improper BP measurement
- Excess sodium intake
- Inadequate diuretic therapy
- Medication
  - Inadequate doses
  - Drug actions and interactions (e.g., nonsteroidal anti-inflammatory drugs (NSAIDs), illicit drugs, sympathomimetics, oral contraceptives)
  - Over the counter (OTC) drugs and herbal supplements
- Excess alcohol intake
- Identifiable causes of hypertension

Compelling Indications for Individual Drug Classes

<table>
<thead>
<tr>
<th>Compelling Indication</th>
<th>Initial Therapy Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Failure</td>
<td>THIAZ, BB, ACEI / ARB, ALDO ANT</td>
</tr>
<tr>
<td>Post myocardial infarction</td>
<td>BB, ACEI / ARB, ALDO ANT</td>
</tr>
<tr>
<td>High CVD risk</td>
<td>THIAZ, ACEI / ARB, CCB</td>
</tr>
<tr>
<td>Diabetes</td>
<td>THIAZ, ACEI / ARB, CCB</td>
</tr>
<tr>
<td>Chronic kidney disease</td>
<td>ACEI / ARB</td>
</tr>
<tr>
<td>Recurrent stroke prevention</td>
<td>THIAZ, ACEI / ARB</td>
</tr>
</tbody>
</table>

Key: THIAZ= thiazide diuretic, ACEI= angiotensin converting enzyme inhibitor, ARB= angiotensin receptor blocker, BB = beta blocker, CCB = calcium channel blocker, ALDO ANT = aldosterone antagonist

Strategies for Improving Adherence to Therapy
- Clinician empathy increases patient trust, motivation, and adherence to therapy.
- Physicians should consider their patients’ cultural beliefs and individual attitudes in formulating therapy.

Monroe County Medical Society Community-wide Guidelines

Management of Adult Hypertension

Detection of White Coat Hypertension or Masked Hypertension in Patients Not on Drug Therapy

Office BP:
- ≥130/80 mm Hg but <160/100 mm Hg after 3 mo trial of lifestyle modification and suspect white coat hypertension

Daytime ABPM or HBPM
- BP <130/80 mm Hg

Yes

White Coat Hypertension
- Lifestyle modification
- Annual ABPM or HBPM to detect progression (Class IIa)

No

Hypertension
- Continue lifestyle modification and start antihypertensive drug therapy (Class IIa)

Office BP:
- 120-129/<80 mm Hg after 3 mo trial of lifestyle modification and suspect masked hypertension

Daytime ABPM or HBPM
- BP ≥ 130/80 mm Hg

Yes

Masked Hypertension
- Continue lifestyle modification and start antihypertensive drug therapy (Class IIa)

No

Elevated BP
- Lifestyle modification
- Annual ABPM or HBPM to detect MH or progression (Class IIa)

Figure 1

Guidelines are intended to be flexible. They serve as reference points or recommendations, not rigid criteria. Guidelines should be followed in most cases, but there is an understanding that, depending on the patient, the setting, the circumstances, or other factors, care can and should be tailored to fit individual needs.

Monroe County Medical Society Community-wide Guidelines

Management of Adult Hypertension

Detection of White Coat Hypertension or Masked Hypertension in Patients on Drug Therapy

**Figure 2**

Guidelines are intended to be flexible. They serve as reference points or recommendations, not rigid criteria. Guidelines should be followed in most cases, but there is an understanding that, depending on the patient, the setting, the circumstances, or other factors, care can and should be tailored to fit individual needs.

Management of Adult Hypertension

Lifestyle Modification

https://healthmetrics.heart.org/detailed-summary/ (page 9, table 6)

Treatment Algorithm

https://healthmetrics.heart.org/detailed-summary (page 6, Figure 1)

Oral Antihypertensive Drugs (including class, dose, frequency, comments)

https://healthmetrics.heart.org/detailed-summary (pages 7-8)

**Physician Resources for Patients**

**Academy of Nutrition and Dietetics**
https://www.eatright.org/find-an-expert
- Find a registered dietician in your area.

**American Heart Association**
http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/FindHBPToolsResources/Find-High-Blood-Pressure-Tools-Resources_UCM_002055_Article.jsp#.W0OE7m8rKAZ

**Center for Disease Control and Prevention**
- https://millionhearts.hhs.gov/learn-prevent/index.html Provides resources to help individuals, health care professionals, and organizations to help prevent and control high blood pressure.
- Sodium Intake Widget - a CDC.gov application that displays content directly on your physician practice websites. There's no technical maintenance. CDC.gov will update the content automatically. Widget helps patients discover how much salt is in their food and the effect on their health.
- Translating the Dietary Approaches to Stop Hypertension (DASH) Diet for Use in Underresourced, Urban African American Communities, 2010

**Dietary Approaches to Stop Hypertension (DASH)** – A flexible and balanced eating plan endorsed by the National Heart, Lung, and Blood Institute to help lower blood pressure.
- Electronic Version of DASH Guide
- Electronic Version of Wallet Card The card helps patients monitor their blood pressure readings and reminders about medication and lifestyle changes.

**Wegmans Eat Well Live Well program**
https://www.wegmans.com/health-nutrition/eat-well-live-well.html

Guidelines are intended to be flexible. They serve as reference points or recommendations, not rigid criteria. Guidelines should be followed in most cases, but there is an understanding that, depending on the patient, the setting, the circumstances, or other factors, care can and should be tailored to fit individual needs.

Monroe County Medical Society Community-wide Guidelines

Management of Adult Hypertension

Measures Commonly Used by National Organizations

Controlling High Blood Pressure: Percentage of patients 18-85 years of age who had a diagnosis of hypertension and whose blood pressure was adequately controlled (<140/90mmHg) during the measurement period (MIPS)

Patients 18–85 years of age who had a diagnosis of hypertension (HTN) and whose Blood Pressure (BP) was adequately controlled during the measurement year based on the following criteria: Members 18–59 years of age whose BP was <140/90 mm Hg. (HEDIS)

Improvement in Blood Pressure: Percentage of patients aged 18-85 years of age with a diagnosis of hypertension whose blood pressure improved during the measurement period. (CMS)

References

Centers for Medicare & Medicaid Services (CMS) Quality Payment Program
https://qpp.cms.gov/


Guidelines are intended to be flexible. They serve as reference points or recommendations, not rigid criteria. Guidelines should be followed in most cases, but there is an understanding that, depending on the patient, the setting, the circumstances, or other factors, care can and should be tailored to fit individual needs.