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Διευθυντής Καρδιολόγος Γ.Ν.Α ''ΚΑΤ''
2018 ESC/ESH Guidelines for the management of arterial hypertension

The Task Force for the management of arterial hypertension of the European Society of Cardiology and the European Society of Hypertension

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## Classes of recommendations

<table>
<thead>
<tr>
<th>Classes of recommendations</th>
<th>Definition</th>
<th>Suggested wording to use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I</td>
<td>Evidence and/or general agreement that a given treatment or procedure is beneficial, useful, effective.</td>
<td>Is recommended/ Is indicated</td>
</tr>
<tr>
<td>Class II</td>
<td>Conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of the given treatment or procedure.</td>
<td></td>
</tr>
<tr>
<td><strong>Class IIa</strong></td>
<td>Weight of evidence/opinion is in favour of usefulness/efficacy.</td>
<td>Should be considered</td>
</tr>
<tr>
<td><strong>Class IIb</strong></td>
<td>Usefullness/efficacy is less well established by evidence/opinion.</td>
<td>May be considered</td>
</tr>
<tr>
<td>Class III</td>
<td>Evidence or general agreement that the given treatment or procedure is not useful/effective, and in some cases may be harmful.</td>
<td>Is not recommendend</td>
</tr>
</tbody>
</table>
# Levels of evidence

<table>
<thead>
<tr>
<th>Level of evidence</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of evidence A</strong></td>
<td>Data derived from multiple randomized clinical trials or meta-analyses.</td>
</tr>
<tr>
<td><strong>Level of evidence B</strong></td>
<td>Data derived from a single randomized clinical trial or large non-randomized studies.</td>
</tr>
<tr>
<td><strong>Level of evidence C</strong></td>
<td>Consensus of opinion of the experts and/or small studies, retrospective studies, registries.</td>
</tr>
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</table>
BP Is Not Adequately Controlled

Proportion of hypertensive patients whose BP is controlled

Europe: 30%-50%[^a]

Canada: >60%^[b]

USA: 53%^[c]

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[^c]: Yoon SS, et al. NCHS Data Brief. 2015;220.
Adherence Is a Cornerstone of BP Control

Retrospective Review of Medical and Pharmacy Claims From 1999-2003 From 134 US Health Plans\(^a\)

- Greater adherence is associated with better BP control\(^{a,b}\)
- Adherence is improved by\(^{a,b}\):
  - Home BP control
  - Safer, better tolerated medication
  - Professional support (eg, pharmacists, nurses)

\*<140/90 mm Hg (<130/85 mm Hg for diabetics)

Pill Burden and Adherence

- Most patients need combination therapy for BP control
- But compliance decreases as pill burden increases
- Many hypertensive patients have comorbidities that require medication, further increasing the pill burden
- Strategies for reducing the adherence problems associated with pill burden
  - Reduce the number of pills
  - Help patients to organize their pills; educate caregivers

Effect of FDCs on BP

- FDCs improve BP control compared with FCs
  - 2010 meta-analysis found that FDCs improved overall BP control by 30% compared with FCs[c]

<table>
<thead>
<tr>
<th>Study</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ebbut et al, 1979</td>
<td>1.43 (0.76, 2.68)</td>
</tr>
<tr>
<td>Mancia et al, 2004</td>
<td>1.13 (0.78, 1.64)</td>
</tr>
<tr>
<td>Schweizer et al, 2007</td>
<td>1.63 (0.93, 2.83)</td>
</tr>
<tr>
<td>Overall</td>
<td>1.30 (0.98, 1.71)</td>
</tr>
</tbody>
</table>

Systolic and diastolic BP normalization ratios of FDC vs FC; fixed-effect model

## Monotherapy vs Combo

<table>
<thead>
<tr>
<th></th>
<th>Monotherapy</th>
<th>Combination therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>“Free”</td>
</tr>
<tr>
<td>Response rate</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Dosage simplicity</td>
<td>Simple</td>
<td>Complex</td>
</tr>
<tr>
<td>Titration flexibility</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Tolerability</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Compliance</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Cost</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Overall BP control</td>
<td>Low</td>
<td>Medium/high</td>
</tr>
</tbody>
</table>
## Drug treatment strategy for hypertension

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Class</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among all antihypertensive drugs, ACE inhibitors, ARBs, beta-blockers, CCBs, and diuretics (thiazides and thiazide-like such as chlorthalidone and indapamide) have demonstrated effective reduction of BP and CV events in RCTs, and thus are indicated as the basis of antihypertensive treatment strategies.</td>
<td>I</td>
<td>A</td>
</tr>
<tr>
<td>Combination treatment is recommended for most hypertensive patients, as initial therapy. Preferred combinations should comprise a RAS blocker (either an ACE inhibitor or an ARB) with a CCB or diuretic. Other combinations of the five major classes can be used.</td>
<td>I</td>
<td>A</td>
</tr>
<tr>
<td>It is recommended that beta-blockers are combined with any of the other major drug classes when there are specific clinical situations, e.g. angina, post-myocardial infarction, heart failure, or heart-rate control.</td>
<td>I</td>
<td>A</td>
</tr>
<tr>
<td>It is recommended to initiate an antihypertensive treatment with a two-drug combination, preferably in a SPC. Exceptions are frail older patients and those at low risk and with grade 1 hypertension (particularly if SBP is &lt; 150 mmHg).</td>
<td>I</td>
<td>B</td>
</tr>
<tr>
<td>It is recommended that if BP is not controlled with a two-drug combination, treatment should be increased to a three-drug combination, usually a RAS blocker + CCB + thiazide/thiazide-like diuretic, preferably as an SPC.</td>
<td>I</td>
<td>A</td>
</tr>
<tr>
<td>It is recommended that if BP is not controlled with a three-drug combination, treatment should be increased by the addition of spironolactone or, if not tolerated, other diuretics such as amiloride or higher doses of other diuretics, a beta-blocker, or an alpha-blocker.</td>
<td>I</td>
<td>B</td>
</tr>
<tr>
<td>The combination of two RAS blockers is not recommended.</td>
<td>III</td>
<td>A</td>
</tr>
</tbody>
</table>
Guidelines For Treatment

**Abbreviations:**
A = ACE inhibitor
(consider angiotensin-II receptor antagonist if ACE intolerant)
C = calcium-channel blocker
D = thiazide-type diuretic

Black patients are those of African or Caribbean descent, and not mixed-race, Asian or Chinese patients.

- **Step 1**: Younger than 55 years
  - A
- **Step 2**: 55 years or older or black patients of any age
  - C or D
  - A + C or A + D
- **Step 3**: A + C + D
- **Step 4**: Add
  - further diuretic therapy
  - alpha-blocker
  - beta-blocker
  - Consider seeking specialist advice

Guidelines from NICE and BHS
The core algorithm is also appropriate for most patients with HMOD, cerebrovascular disease, diabetes, or PAD
Drug-treatment strategy for hypertension and CAD

**Initial therapy (Dual combination):**
- ACEi or ARB + beta-blocker or CCB
- or CCB + diuretic or beta-blocker
- or beta-blocker + diuretic

**Step 2: Triple combination of above**

**Step 3: Triple combination + spironolactone or other drug**
- Resistant hypertension: Add spironolactone (25-50 mg o.d.) or other diuretic, alpha-blocker or beta-blocker

- Consider monotherapy in low risk grade 1 hypertension (systolic BP <150mmHg), or in very old (>80 years) or frail patients.
- Consider initiating therapy when systolic BP is ≥130 mmHg in these very high risk patients with established CVD.
- Consider referral to a specialist centre for further investigation.

*Williams, Mancia et al., J Hypertens 2018;36:1953-2041 and Eur Heart J 2018;39:3021-3104*
Drug-treatment strategy for hypertension and CKD

**1 Pill**
- Initial therapy
  - Dual combination

**1 Pill**
- Step 2
  - Triple combination

**2 Pills**
- Step 3
  - Triple combination + spironolactone or other drug

**ACEi or ARB + CCB or ACEi or ARB + diuretic (or loop diuretic)**

**Beta-blockers**
- Consider beta-blockers at any treatment step, when there is a specific indication for their use, e.g. heart failure, angina, post-MI, atrial fibrillation, or younger women with, or planning, pregnancy

**ACEi or ARB + CCB + diuretic (or loop diuretic)**

**Resistant hypertension**
- Add spironolactone (25-50 mg o.d.) or other diuretic, alpha-blocker or beta-blocker

A reduction in eGFR and rise in serum creatinine is expected in patients with CKD who receive BP-lowering therapy, especially in those treated with an ACEi or ARB but a rise in serum creatinine of >30% should prompt evaluation of the patient for possible renovascular disease.

*Williams, Mancia et al., J Hypertens 2018;36:1953-2041 and Eur Heart J 2018;39:3021-3104*
Drug-treatment strategy for hypertension and HRrEF

Initial therapy

ACEi or ARB\(^a\) + diuretic\(^b\) (or loop diuretic) + beta-blocker

Step 2

ACEi or ARB\(^a\) + diuretic\(^b\) (or loop diuretic) + beta-blocker + MRA\(^c\)

When antihypertensive therapy is not required in HFrEF, treatment should be prescribed according to the ESC Heart Failure Guidelines.\(^{136}\)

Williams, Mancia et al., J Hypertens 2018;36:1953-2041 and Eur Heart J 2018;39:3021-3104
Drug-treatment strategy for hypertension and AF

**Initial therapy**

Dual combination

**ACEi or ARB + beta-blocker**

or non-DHP CCB

or beta-blocker + CCB

**Step 2**

Triple combination

ACEi or ARB + beta-blocker + DHP CCB or diuretic

or beta-blocker + DHP CCB + diuretic

Add oral anticoagulation when indicated according to the CHA₂DS₂-VASc score, unless contraindicated.

*a* Routine combination of beta-blockers with non-dihydropyridine CCBs (e.g. verapamil or diltiazem) is not recommended due to a potential marked reduction in heart rate.
ΣΥΜΠΕΡΑΣΜΑΤΑ

Οι νέες οδηγίες για την ΑΥ, ΒΟΗΘΟΥΝ με ρεαλιστικό τρόπο στην διάγνωση και θεραπεία της ΑΥ.

Το ποιο σημαντικό γεγονός είναι να αυξησουμε την ρύθμιση της ΑΠ, με εξυπνες αλλα απλές θεραπευτικές στρατηγικές οπως η εφαρμογή των νεων θεραπευτικών αλγορίθμων.
Thank you for your attention!