Hypertension Algorithm for Diabetes in Adults

Assess Blood Pressure \(^1\) (BP)

- BP ≤130/80 mmHg
- BP >130/80 mmHg

Follow-up BP each visit
If microalbuminuria or nephropathy present (Table 1)

Start ACE inhibitor (ACEi) therapy \(^2\-^5\)
IF microalbuminuria or nephropathy present (Table 1)
IF African-American- Start ACEi in combination with diuretic or CCB
IF SBP ≥145mmHg and/or DBP≥90mmHg
Start with combination antihypertensive therapy

Reassess therapy in 4-8 weeks-Titrate to at least 1/2 max dose
Encourage self-monitoring of blood pressure \(^1\)
(on average ≥ 3 medications will be needed to achieve blood pressure goals)

ADD: Medication not chosen from above
OR Go to Alternative Treatment \(^***\)

ADD: a blocker, hydralazine, clonidine (caution with b blocker)

Table 1

<table>
<thead>
<tr>
<th>Microalbuminuria/Proteinuria (^3)</th>
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<tbody>
<tr>
<td>In Type 2 patients, an ACEi or angiotensin receptor blocker (ARB) may be used first line.</td>
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<tr>
<td>In Type 1 patients, an ACEi is recommended to reduce protein excretion.</td>
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<tr>
<td>Consider use of amlodipine, carvedilol, diltiazem, amiodipine, felodipine, isradipine, nisoldipine.</td>
</tr>
</tbody>
</table>

Footnotes

1 Joint National Committee on Detection, Evaluation and Treatment of High Blood Pressure: The seventh report of the Joint National Committee on Detection, Evaluation and Treatment of High Blood Pressure (JNC 7). JAMA. 2003;289(19):2560-72; consider secondary causes as appropriate
2 Maintain non-pharmacological therapy throughout treatment. Medical Nutrition Therapy Algorithm = low sodium diet (<2.4 g/day; if ≥ age 50, ≤ 1.5 g/day) + limit alcohol intake (1 oz./day for men, 0.5 oz./day for women) Weight Loss and Exercise Algorithms.
4 Monitor serum K\(^+\) and creatinine periodically
5 If intolerant to ACEi (except angioedema) consider angiotensin receptor blocker (ARB).
6 Monitor serum K\(^+\), creatinine, and liver enzymes periodically.
7 Am J Kids Dis. 2000;36:646-61
8 Metoprolol, carvedilol, bisoprolol, atenolol
9 Amlodipine, felodipine, isradipine, nicardipine, nisoldipine

DBP Diastolic Blood Pressure
MI Myocardial Infarction
SBP Systolic Blood Pressure

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See disclaimer at www.tdctoolkit.org/algorithms_and_guidelines.asp
HYPERTENSION ALGORITHM FOR DIABETES IN ADULTS

Proper blood pressure assessment

ACE inhibitor as 1st line therapy in Diabetes Mellitus


Diuretic as second line

Antihypertensive & Lipid Lowering Treatment to Prevent Heart Attack (ALLHAT) JAMA 288:2981-97, 2002

Beta-Blocker as second line

Verapamil or Diltiazem


Dihydropyridine calcium channel blockers


Alpha-Blockers
Major cardiovascular events in hypertensive patients randomized to doxazosin vs chlorthalidone. (ALLHAT Data) JAMA 283:1967–75, 2000

Blood Pressure Goal <130/80


Urine Protein Excretion >1 gram/24 hour BP goal <125/75

Angiotensin Receptor Blockers


African Americans