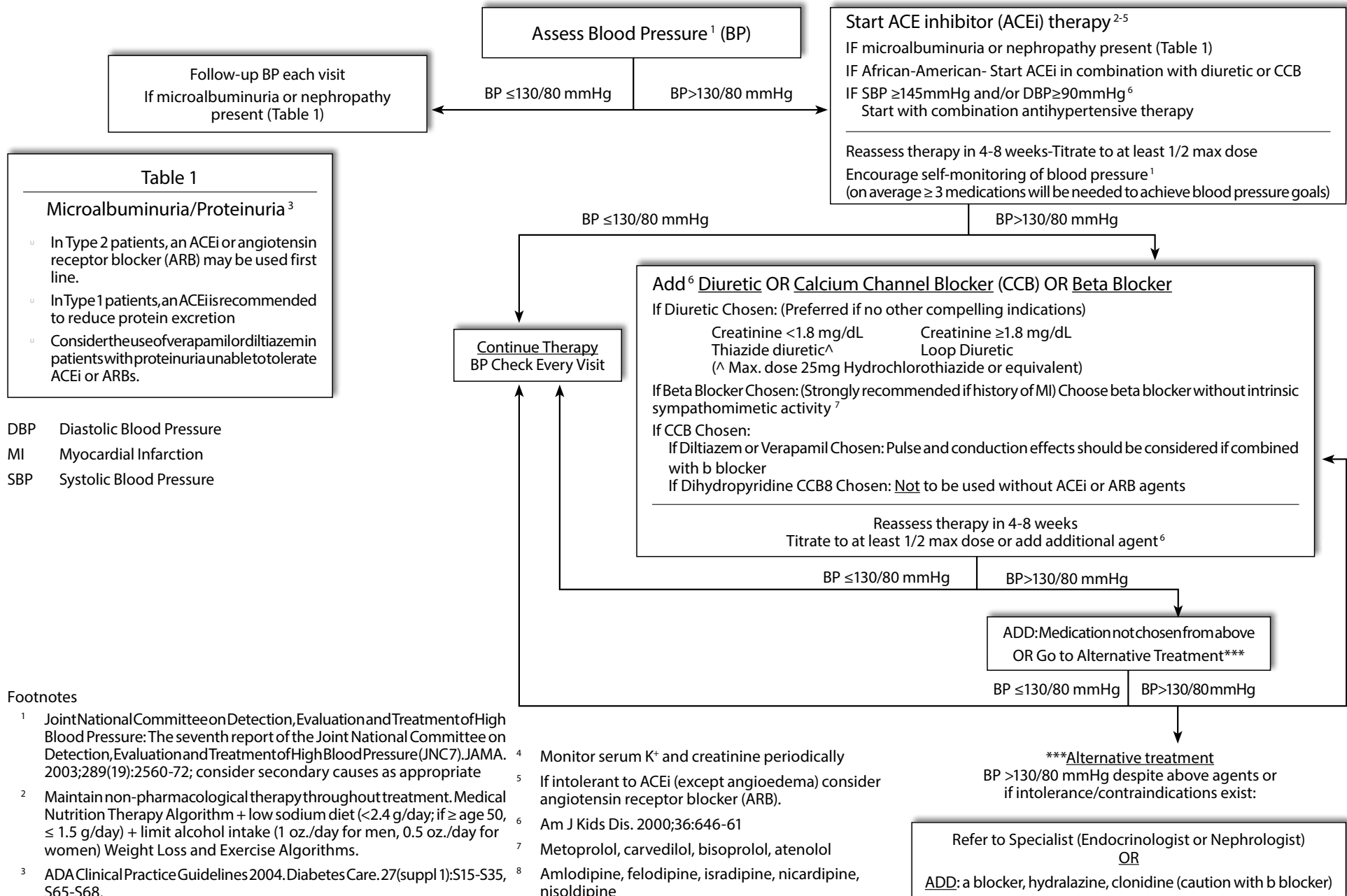


Hypertension Algorithm for Diabetes in Adults



HYPERTENSION ALGORITHM FOR DIABETES IN ADULTS

Proper blood pressure assessment

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)*. National Institutes of Health, National Heart, Lung and Blood Institute, 2003 <http://www.nhlbi.nih.gov/guidelines/hypertension/>

ACE inhibitor as 1st line therapy in Diabetes Mellitus

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)*. National Institutes of Health, National Heart, Lung and Blood Institute, 2003 <http://www.nhlbi.nih.gov/guidelines/hypertension/>

Kasiske BL, Kalil RS, Ma JZ, et al.: Effect of antihypertensive therapy on the kidney in patients with diabetes: a meta-regression analysis. *Ann Intern Med* 118:129–38, 1993

UK Prospective Diabetes Study Group: Efficacy of atenolol and captopril in reducing the risk of macrovascular complications in type 2 diabetes (UKPDS 39) *BMJ* 317:713–20, 1998

The Heart Outcomes Prevention Evaluation Study. Effects of an ACE inhibitor, ramipril, on cardiovascular events in high risk patients. *N Engl J Med* 342:145–53, 2000

Pahor M, Psaty BM, Alderman MH, et al. Therapeutic benefits of ACE inhibitors and other antihypertensive drugs in patients with type 2 diabetes. *Diabetes Care* 23:888–92, 2000

Wing LMH, Reid CM, Ryan P, et al. A comparison of outcomes with angiotensin-converting-enzyme inhibitors and diuretics for hypertension in the elderly (ANBP2). *N Engl J Med* 348:583–92, 2003

Diuretic as second line

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)*. National Institutes of Health, National Heart, Lung and Blood Institute, 2003 <http://www.nhlbi.nih.gov/guidelines/hypertension/>

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

Beta-Blocker as second line

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)*. National Institutes of Health, National Heart, Lung and Blood Institute, 2003 <http://www.nhlbi.nih.gov/guidelines/hypertension/>

UK Prospective Diabetes Study Group: Efficacy of atenolol and captopril in reducing the risk of macrovascular complications in type 2 diabetes (UKPDS 39) *BMJ* 317:713–20, 1998

Hansson L, Lindholm LH, Niskanen L, et al. Effect of angiotensin converting-enzyme inhibition compared with conventional therapy on cardiovascular morbidity and mortality in hypertension: the Captopril Prevention Project (CAPPP) randomised trial. *Lancet* 353: 611–16, 1999

Verapamil or Diltiazem

Hansson L, Hedner T, Lund-Johansen P, et al. Randomized trial of effects of calcium antagonists compared with diuretics and beta-blockers on cardiovascular morbidity and mortality in hypertension. NORDIL. *Lancet* 356:359–65, 2000

Bakris GL, Copley JB, Vicknair N, et al. Calcium channel blockers versus other antihypertensive therapies on progression of NIDDM associated nephropathy. *Kidney Int* 50:1641–50, 1996

Dihydropyridine calcium channel blockers

Tuomilehto J, Rastenyte D, Birkenhager WH, et al. Effect of calcium channel blockage in older patients with diabetes and systolic hypertension. *N Engl J Med* 340:677–84, 1999

Dahlof B, Sever P, Poulter N, et al. Prevention of cardiovascular events with an antihypertensive regimen of amlodipine adding perindopril as required versus atenolol adding bendroflumethiazide as required, in the Anglo-Scandinavian Cardiac Outcomes Trial-Blood Pressure Lowering Arm (ASCOT-BPLA): a multicentre randomised controlled trial. *Lancet* 366: 895–906, 2005

Estacio RO, Jeffers BW, Hiatt WR, et al. The effect of nisoldipine as compared with enalapril on cardiovascular outcomes in patients with non-insulin-dependent diabetes and hypertension. *N Engl J Med* 338:645–52, 1998

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

American Diabetes Association: Clinical Practice Recommendations 2004. *Diabetes Care* 27 (suppl 1):S15–S35; S65–S67, 2004

Hansson L, Zanchetti A, Carruthers SG, et al. Effects of intensive blood-pressure lowering and low-dose aspirin in patients with hypertension: principal results of the Hypertension Optimal Treatment (HOT) randomised trial. *Lancet* 351:1755–62, 1998

Tight blood pressure control and risk of macrovascular and microvascular complications in type 2 diabetes: UKPDS 38 *BMJ* 317:703–13, 1998

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

Peterson JC, Adler S, Burkart JM, et al. Blood pressure control, proteinuria, and the progression of renal disease. The Modification of Diet in Renal Disease Study. *Ann Intern Med* 123:754–62, 1995

Angiotensin Receptor Blockers

Renoprotective effect of the angiotensin-receptor antagonist irbesartan in patients with nephropathy due to type 2 diabetes. *N Engl J Med* 345: 851–60, 2001

Effects of losartan on renal and cardiovascular outcomes in patients with type 2 diabetes and nephropathy. *N Engl J Med* 345:861–69, 2001

Effects of irbesartan on the development of diabetic nephropathy in patients with type 2 diabetes. *N Engl J Med* 345:870–78, 2001

African Americans

Wright JT, Dunn JK, Cutler JA, et al. Outcomes in hypertensive black and nonblack patients treated with chlorthalidone, amlodipine, and lisinopril. *JAMA* 293:1595–1607, 2005

Wright JT, Bakris G, Greene T, et al. Effect of blood pressure lowering and antihypertensive drug class on progression of hypertensive kidney disease: results from the AASK Trial. *JAMA* 288:2421–31, 2002