

## Choice of antihypertensive drugs in patients with co-existing conditions

Co-existing condition	Favourable effect on co-existing condition		Unfavourable effect on co-existing condition	
	Compelling indication	Possible indication	Contra-indication	Precaution
Heart failure	Low-dose thiazides or thiazide-like drugs Beta-blockers, ACE inhibitors	Angiotensin II receptor antagonists	Alpha-blockers (due to mechanical obstruction e.g. aortic stenosis)	Verapamil, diltiazem Beta-blockers <sup>a</sup>
Post myocardial infarction	Beta-blockers, ACE inhibitors			
Angina	Beta-blockers Calcium-channel blockers			Calcium-channel blockers (on initiation and withdrawal)
Secondary stroke prevention	Low-dose thiazides or thiazide-like drugs +/- ACE inhibitors			
Tachyarrhythmias	Beta-blockers			
Isolated systolic hypertension	Low-dose thiazides or thiazide-like drugs Calcium-channel blockers			
Diabetes mellitus without renal disease	Low-dose thiazides or thiazide-like drugs, Beta-blockers, ACE inhibitors, Angiotensin II receptor antagonists			
Diabetes mellitus with microalbuminuria/proteinuria	ACE inhibitors <sup>b</sup> Angiotensin II receptor antagonists <sup>c</sup>			
Non-diabetic nephropathy	ACE inhibitors			
Elderly	Low-dose thiazides or thiazide-like drugs Calcium-channel blockers			Thiazides and thiazide-like drugs (↑ risk of electrolyte imbalance) Calcium-channel blockers (start with a low dose)
ACE inhibitor intolerance	Angiotensin II receptor antagonists			
Benign prostatic hypertrophy	Alpha-blockers			
Pregnancy		Beta-blockers	ACE inhibitors (category D) Angiotensin II receptor antagonists (category D) Thiazides and thiazide-like drugs (category C)	Calcium-channel blockers (category C) Beta-blockers (category C)
Peripheral vascular disease				Beta-blockers
Gout				Thiazides and thiazide-like drugs
Bradycardia, grade 2 or 3 atrioventricular block			Beta-blockers Verapamil, diltiazem	
Hyperkalaemia			ACE inhibitors Angiotensin II receptor antagonists	
Bilateral renal artery stenosis			ACE inhibitors Angiotensin II receptor antagonists	
Orthostatic hypotension			Alpha-blockers	Thiazides and thiazide-like drugs (where symptomatic) Alpha-blockers (in volume depletion)
Asthma/COPD			Beta-blockers <sup>d</sup>	
Renal impairment				Refer to AMH

<sup>a</sup> Beta-blockers are increasingly used to treat stable heart failure, however, beta-blockers may worsen heart failure.

<sup>b</sup> ACE inhibitors are associated with a reduction in proteinuria and slowing of the rate of progression of renal failure in patients with renal disease, in particular those with type 1 diabetes and diabetic nephropathy. (See WHO-ISH 2003)

<sup>c</sup> Angiotensin II receptor antagonists have been shown to delay progression of renal disease in people with both type 2 diabetes and diabetic nephropathy.<sup>1,2</sup>

<sup>d</sup> Cardioselective beta-blockers may be used cautiously in mild-to-moderate disease.

Note: A systematic review found that data from the highest quality studies suggest that the incidence of type 2 diabetes is unchanged or increased by thiazide diuretics and beta-blockers and unchanged or decreased by ACE inhibitors, calcium channel blockers and AT II receptor antagonists.<sup>3</sup>

### Developed from:

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### References

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