Hypertension and Diabetes: bad companions

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Diabetics are more likely to suffer from hypertension than non-diabetics. Factors that may contribute to the increased prevalence of hypertension in diabetics include:

(i) Obesity
(ii) Insulin resistance
(iii) Renal disease (i.e. diabetic nephropathy).

More than two thirds of diabetic patients have hypertension with a resultant sevenfold increase in mortality. Hypertensive diabetics with nephropathy have a 37-fold increase in mortality! The major problem in diabetes, especially type 2 diabetes, is an increase in cardiovascular disease. Hypertension is also an important contributor to cardiovascular disease in diabetics.

MANAGEMENT APPROACH:

BASIC CONCEPT:
Multifactorial intervention is necessary for optimal results.

1. More aggressive (intensive) treatment is necessary
The goal BP should be: < 130/80 mmHg. In general, for every 10 mmHg reduction in systolic blood pressure, there will be a reduction of 12% of any complication related to diabetes, including retinopathy and renal disease. To achieve this blood pressure goal will require multiple drug antihypertensive therapy; the majority of patients will require two or more drugs.

2. Drugs used are the same as for hypertension in non-diabetics
Thiazide-type diuretics are beneficial in diabetics, either alone or as part of a combined regimen.
Therapy with an ACE-Inhibitor is also an important component of treatment regimens in diabetics, as are Angiotensin-Receptor Blockers (ARBs). Beta-blockers, especially β₁-selective agents, are beneficial as part of combination therapy (their value as monotherapy is not clear). Calcium channel blockers are useful, particularly as part of a combination regimen to control blood pressure to goal.

3. Blocking the Renin-Angiotensin System [RAS]
ACE-inhibitors and ARBs are necessary in diabetic nephropathy to delay the progression of nephropathy (microalbuminuria; proteinuria). More data is available on the usefulness of ACE-inhibitors in type 1 diabetes and on the usefulness of ARBs and type 2 diabetes with nephropathy. The ideal blood pressure for nephropathy patients excreting more than 1 gram of protein per day is 125/75 mmHg.

4. Other risk factors to be treated simultaneously:
   A. Statin therapy: The LDL goal for diabetics is < 2.6 mmol/l. Both the British Heart Protection Study (BHPS) and the Collaborative Atorvastatin Diabetes Study (CARDS) showed marked reductions in mortality with the routine use of statins. Diabetes mellitus is currently viewed as a coronary heart disease equivalent.
   B. Aspirin
   C. Intense glycaemic control (Hb₁AC < 7%)
   D. Smoking cessation.

See CPD Questionnaire p.47

References