





Diabetes and Renal Disease



This department covers selected points from the 2006 Endocrine Update: A CME Day from the Division of Endocrinology and Metabolism at McMaster University and the University of Western Ontario, June 2006.
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Diabetic nephropathy can be characterized by the following:

- early (albuminuria 30 mg/24 hours to 300 mg/24 hours), or
- overt (albuminuria > 300 mg/24 hours).

In Type 1 and Type 2 diabetes, the clinical courses of microalbuminuria are in some ways similar and in other ways different. In Type 1 diabetes, microalbuminuria predicts an increased risk of progression to overt nephropathy; however, recent studies suggest that a large proportion of these patients do not progress. Microalbuminuria in Type 2 diabetes also predicts overt nephropathy, but has a greater association with mortality.

Standard treatment

Once overt diabetic nephropathy develops, rates of decline in creatinine clearance can vary considerably, from as low as 2 ml/minute per year in normotensive patients to 20 ml/minute per year in poorly-treated hypertensive patients. ACE inhibitors and ARBs are now standard treatments for diabetic nephropathy. A recent study in Type 2 diabetes confirmed that ACE inhibitors and ARBs appear to be equivalent with respect to renal protection. There are some

promising reports on the benefit of combination ACE inhibitor and ARB therapy and on the use of a ultra-high dosing of ARBs.

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In diabetic nephropathy, the target systolic BP should be 125 mmHg; mortality has been reported to increase with BPs that are lower than this. Most patients will require three to four antihypertensive medications to achieve excellent BP control.

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Proteinuria as a predictor

In diabetic nephropathy patients with Type 2 diabetes, the degree of proteinuria is highly predictive of renal and cardiovascular outcomes. Patients who show a reduction in proteinuria have fewer cardiovascular events and less progression of their renal disease. Current guidelines suggest that referral to nephrology should occur at a creatinine clearance of 60 ml/minute. In the well-treated patient with a slow rate of disease progression, it can be argued that this is too early and that referral at a creatinine clearance of 30 ml/minute to 40 ml/minute is more than adequate. 




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