

## A MULTIDISCIPLINARY APPROACH TO IMPROVE SCREENING AND MANAGEMENT OF DIABETIC NEPHROPATHY

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**PROBLEM:** The prevalence rate of diabetic renal disease (diabetic nephropathy in patients with Type II Diabetes (T2D).) is between 8 and 32%. The 'Gold Standard' screening test is Albumin excretion Rate (AER) calculated from timed urine collection however Albumin Creatinine Ratio (ACR) from an early morning specimen of urine is a simpler and more convenient tool for screening for diabetic nephropathy than AER.

**PURPOSE:** A pilot study was conducted to determine the prevalence, incidence and to facilitate the management of diabetic nephropathy in North Wales.

**DESIGN AND FINDINGS:** A multidisciplinary team of 6 GP's, receptionists, practice nurses in different practices, one Research/Diabetic Nurse Specialist, Renal/Diabetic Specialist and Chemical Pathologist was set up to conduct the study in 3 phases:

**Phase 1-** in 2000 a retrospective audit of 853 people with Type T2D in primary care showed that 82% had not been screened for diabetic nephropathy since the diagnosis of T2D. All patients were invited to have AER's checked, only 255 patients attended, i.e. 30% response rate, 22% had microalbuminuria.

**Phase 2 -** in 2002 a clinical algorithm was devised for screening and treatment of diabetic renal disease which was ratified by Clinical Audit Committee, Drugs and Therapeutics Committee, Local Health Boards, diabetologist and renal physicians in Conwy and Denbighshire. The Beckman Coulter Immage Immuno-chemistry System was introduced to measure ACR and the second cohort of 293 people with T2D were invited for screening, 243 attended i.e. 83% response rate. Out of those patients with raised ACR, microalbuminuria was confirmed with AER in 61 patients, i.e. 21% had diabetic renal disease.

**Phase 3 –** in 2003 satellite clinics were set up in the GP practices and all the 61 patients were reviewed:

66% were males, 34% females, mean age of 70.2 years (21 – 90)

61% had diabetes for less than 10 years, 26% between 10 and 20 years and the rest > 20 years. 84% were non-smokers, 49% had BMI's > 30, 52% had Hb1Ac < 7.5%. 67% had cholesterol < 5.0 mmol/l, 61% had systolic BP > 150. 67% were on oral hypoglycaemic agents alone, 33% on oral hypoglycaemic agents and insulin, 51% were on lipid lowering agents, 84% were already receiving ACE Inhibitors or Angiotensin II Receptor Antagonists, 30% had renal impairment (creatinine >120 µmol/l). In the satellite clinics 59 medication changes were made. 88% of the patients needed advice to modify lifestyle, 30% were transferred to our hospital based Diabetic Nephropathy clinic for further management in view of renal impairment.

**CONCLUSION AND RELEVANCE:** Using a multidisciplinary approach the incidence and prevalence of diabetic renal disease in people with T2D was established in this pilot study and using an agreed protocol between primary and secondary care, the majority of the patients with diabetic renal disease were managed in primary care. Early identification and appropriate treatment of patients with diabetic renal disease should reduce the number of patients reaching end stage renal disease due to diabetes and reduce late referrals. This pilot study will help the planning of to manage this epidemic.