

G3A The incidence of established renal failure among patients attending a tertiary referral hypertension clinic

Introduction

Hypertension with no primary renal diagnosis (ERA-EDTA PRD code 72) is a rarely reported cause of established renal failure (ERF) in European renal replacement therapy (RRT) registries. In North America this code accounts for more than 20% of incident RRT patients. Whether this reflects differing disease incidence due, for example, to a different racial case-mix, or different thresholds for making the diagnosis of hypertensive nephrosclerosis is unclear.

Aim

The aim of this study was to determine the incidence of ERF in hypertensive individuals attending the Glasgow Blood Pressure Clinic (GBPC).

Methods

The GBPC is a secondary and tertiary referral centre for people with hypertension from the West of Scotland. The clinic, based at the Western Infirmary, Glasgow has a computerised database containing demographic details, clinical features, diagnoses and treatments. The GBPC database was linked (by the Information Services Division, NHSScotland) with the Scottish Renal Registry (SRR) which has national data on patients starting RRT for ERF since 1960. Patients registered with the GBPC who developed ERF requiring RRT were identified. The individual electronic records held by the SRR were examined to establish the PRD which had led to ERF in each case.

Results

Since 1967 11393 (5479 male, 5914 female) patients have been seen at the Glasgow blood pressure clinic. Mean age at referral was 49.9 (SD 16.6) years, follow-up duration ranged from 4 years to 33 years. Mean blood pressure at referral was 169/99 (SD 29/15) mmHg, mean blood pressure at the final visit was 152/90 (SD 26/13) mmHg.

During a mean follow up period of 13.5 years, 146 (81 male, 65 female) patients developed ERF and were referred for RRT, mean age at commencement of RRT was 57.5 (SD 13.6) years. Hypertension with no primary renal diagnosis had been recorded in only 13 (9%) of these patients (ie 0.11% of the whole cohort), 29 had ERF of unknown cause. The majority had an underlying glomerular ($n = 44$), interstitial ($n = 16$) or structural ($n = 44$) lesion to account for their ERF. Furthermore, at referral to the blood pressure clinic the majority of patients who subsequently developed ERF already had established chronic kidney disease. Mean initial eGFR (using the 4 point MDRD formula) among those patients who developed ERF was lower than in those who did not 46 (SD 25) mL/min and 74 (SD 27) mL/min respectively ($p < 0.001$).

Conclusions

In a large secondary and tertiary referral centre for hypertension, progression to ERF is a rare outcome despite sub-optimal mean achieved blood pressure. Fewer than 10% of the cases of ERF identified were attributed to hypertensive nephrosclerosis.

Further studies are needed to determine the true risk of progression to ERF in hypertensive patients with and without underlying renal disease and other co-morbidities such as diabetes.