IMPACT OF DIFFERENT CLASSES OF ANTI-HYPERTENSIVE THERAPY ON DEATH AND DISEASE PROGRESSION IN OLDER PATIENTS WITH CKD

Maharajan Raman[1,2], Darren Green[1,2], Thilini Nishani Abeygunaratne[1,2], Rachel J. Middleton[1,2], Philip A. Kalra[1,2]

1. Vascular Research Group, Salford Royal NHS Foundation Trust, 2. Cardiovascular Sciences, University of Manchester United Kingdom

1. Introduction

Age has a significant structural and functional impact on the kidney. This can alter the pharmacokinetics and pharmacodynamics of a drug. Certain groups of drugs have a significant role in reducing cardiovascular risk and progression of CKD but can also be associated with adverse events such as acute kidney injury. In this study we examined the impact of different classes of anti-hypertensive therapy on rates of death and renal replacement therapy in older patients with CKD.

2. Methods

This was a sub-group analysis of the Salford Kidney Study, a prospective observational study of patients with an eGFR of <60 ml/min/1.73m^2 referred to a nephrology secondary care centre and accumulated since 2002. For this analysis we selected patients with hypertension who were on at least one of the classes of anti-hypertensive (n=2485). We then excluded patients aged <65 years (n = 1038), and those with other cardiovascular diseases for which the drugs were indicated (heart failure and coronary artery disease, n=738). The hazard ratios (HR) for death and for RRT were calculated for patients on each different class of antihypertensive therapy compared to patients not on that particular class of antihypertensive. A Cox proportional hazard model was used and adjusted for gender, SBP, smoking, eGFR, CVD,PVD, diabetes, and number of prescribed anti-hypertensives. P-values <0.05 were considered statistically significant. SPSS version 22.0 (SPSS Inc, Chicago, IL, USA) was used for the above analyses.

3. Results

Table 3.1 Baseline characteristics	
Number (n)	709
Age (years)	73.5 (69.2-78.9)*
Systolic blood pressure (mm/Hg)	142 (130-157.25)*
Number of anti-hypertensive medications	2 (1-3)*
Smokers % (n)	65.7% (466)
Male % (n)	60.2% (427)
Co- morbidities	
Diabetes % (n)	31.9% (226)
Cerebrovascular Disease (CVD) % (n)	14.8% (105)
Peripheral vascular disease (PVD) % (n)	19% (135)
Laboratory	
Haemoglobin (g/L)	122 (110-133)*
eGFR (ml/min/1.73m^2)	29.1 (19.7- 40.5)*
Parathyroid hormone (ng/L)	65 (38-112.7)*
Albumin (g/L)	42 (40-45)*
Protein creatinine ratio (g/mol)	21 (10-67)*

*Median (Inter-quartile range)
Estimated glomerular filtration rate (eGFR)

Figure 3.2 Primary Renal Disease

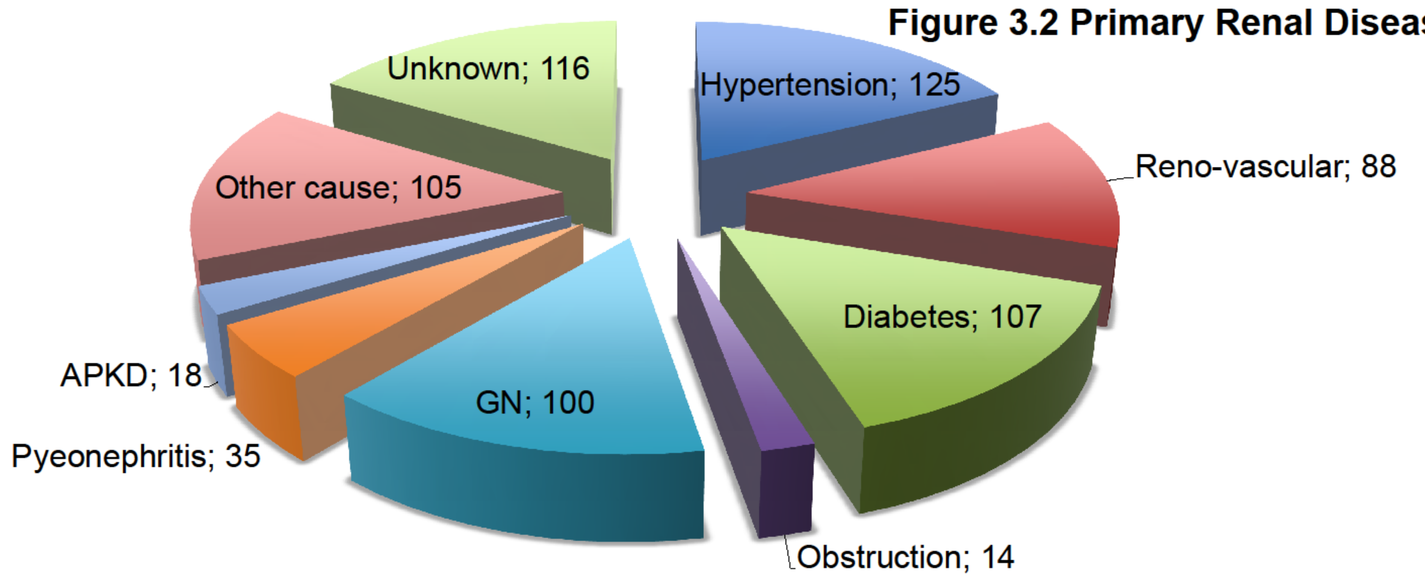

Table 3.3 Adjusted HR for death and RRT for different classes of anti-hypertensive therapy in older patients with CKD

			Death			RRT		
Medication type	***N***	***% of patients***	***HR***	***CI***	***P***	***HR***	***CI***	***P***
RAS-i	429	62	0.81	0.62-1.07	0.150	1.90	1.09-3.28	0.022
B blocker	245	35	1.02	0.78-1.33	0.874	0.63	0.38-1.06	0.083
CCB	422	60	0.98	0.75-1.28	0.891	0.91	0.55-1.51	0.732
Diuretics	378	55	0.90	0.68-1.20	0.494	0.47	0.27-0.84	0.010
α blocker	324	46	1.25	0.97-1.61	0.084	1.14	0.71-1.82	0.576

*Renin angiotensin system inhibitor (RAS-i), Calcium channel blocker (CCB), Renal replacement therapy (RRT)
Hazard ratio (HR), Confidence interval (CI)*

4. Conclusion

Although RAS-i significantly increased the likelihood of RRT in this elderly cohort; there remained a numerical survival benefit to using RAS-i compared to other anti-hypertensives. Patients on diuretics had the slowest progression to RRT despite no worse baseline eGFR. α blockers were associated with the worst survival although this did not reach statistical significance (p=0.08) and also a higher numerical likelihood of RRT. These findings favour the use of RAS-i and diuretics and suggest that α blockers should be used with caution in older patients with CKD.

53 ERA
750--SP
Late Breaking Clinical Trials.
Maharajan Raman
DOI: 10.3252/pso.eu.53era.2016
ePosters supported by F. Hoffmann- La Roche Ltd.
53rd CONGRESS ERA-EDTA VIENNA AUSTRIA MAY 21st-24th, 2016
Held jointly with Österreichische Gesellschaft für Nephrologie
PosterSessionOnline.com