P293

P293-usage of renin-angiotensin aldosterone system (RAAS) blockade to reduce the cardiovascular risks in patients on regular haemodialysis - review of a practice in a single center dialysis unit

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Introduction: There is evidence that ACE inhibitors and ARBs help reduce and protect against myocardial and vascular hypertrophy, atherosclerosis and plaque rupture [1, 2]. This is shown in various trials including the HOPE study where ACE inhibition significant reduced in the risk of death, myocardial infarction, and stroke, in high risk patients. [3] It is also shown that in preventing diabetic nephropathy RAAS blockade is significantly more effective than blood-pressure control alone. [4] The ongoing STOP-ACEi trial is currently investigating if withdrawal of RAAS blockade in progressive CKD 4 and 5 patient helps to stabilise renal function or worsen the cardiovascular risks [5]. However in clinical practice, there is inertia on restarting patients on RAAS blockers when they start on dialysis despite needing medications for BP control.

The aim of this project is to have an overview on medication management with BP control and usage of an ACE inhibitor or ARB in this patient group.

Methods: We retrospectively looked patients who started dialysis between July 2017 and November 2018. Patients were assessed whether they were on an ACEi or ARB before and after starting dialysis and whether they had a diagnosis of diabetes or hypertension. Further analysis on patients who had hypertension looked into whether they were on other anti-hypertensive medications instead of RAAS blockade.
Results: A total of 119 patients were analyzed who started on dialysis. The age range was 20 years old to 89, (mean age 59). Among them, 85 (71%) patients had hypertension, and of those only 22 (26%) were taking an ACEi (15) or ARB (7). This compares with 51 (60%) patients who were taking an ACEi (32) or ARB (19) before they started on dialysis. Therefore, a significant number of patients were not restarted on ACE or ARB. Further analysis showed that of the 63 hypertensive dialysis patients who were not on RAAS blockade, 50 were on 2 (24, 38%), 3 (14, 22%) or 4 (12, 19%) other agents. In addition, 30 (out of 63) also had a diagnosis of diabetes.

Discussion: There is clear evidence that RAAS blockade has cardiovascular protection in particular in diabetic patients. [7] However it appears that the majority of patients on dialysis who have hypertension and/or diabetes are not started or restarted on an ACEi or ARB. It is also evident that other anti-hypertensive agents are used more frequently than ACEi or ARB in these patients. This may be because of other contraindications (eg: hyperkalaemia), however given the evidence that RAAS blockade has cardiovascular protection in ischaemic heart disease, angina and heart failure, unless there is a contraindication, an ACEi or ARB medication should be considered as it is likely have prognostic benefit particularly in dialysis patients who are at high high risk for cardiovascular events.